Natural Resources Inventory & Analysis

Introduction

It is visually apparent from the physiographic map in the first section of this document that the South Mountains Range stands out from its surroundings. As a portion of the South Mountains Range, the park encompasses several headwater streams, natural communities of significance, rare plants, rare animal species, extreme elevations for the Piedmont Province, and significantly steep slopes exceeding 65% in a number of areas.

Hydrology

South Mountains State Park is dissected by a number of streams of various sizes that flow north, northeast, and east, eventually converging with the Catawba River. The park's southern boundary follows the northernmost ridge of a portion of the Broad River Basin to the south. Figure 9 illustrates the Catawba River's relationship to other river basins in North Carolina. Figures 10, 11, and 12 illustrate the park's hydrologic context.

The Catawba River is located to the north and east of South Mountains State Park. It flows generally to the south, eventually flowing into the Wateree River in South Carolina. The Wateree River flows southeast to its confluence with the Congaree River, which also flows to the southeast. The Congaree ends at the Atlantic Ocean in Charleston, South Carolina.

The primary interpretive theme for South Mountains State Park is the ecology of its outstanding resource waters. South Mountains State Park contains headwater streams for both the Jacob Fork and the Henry Fork watersheds. Clear Creek and Bailey Fork primarily drain the western section of the park and are both headwater watersheds that flow into Silver Creek. All three of these smaller hydrologic units flow to the Catawba River Basin.

Note: Data utilized for site inventory and analysis was provided by multiple sources and represents the best data available at the time of creation of the maps. Data descriptions, sources, and dates are provided under Resources and References, near the end of this document.

All, except two* of the named tributaries within the park boundaries are classified by the NC Division of Water Quality as *High Quality Waters* (*HQW*). The named streams in the Jacob Fork watershed are classified as *Outstanding Resource Waters* (*ORW*) and *Trout* (*Tr*) waters, and are all designated as *Water Supply* (*WS*) watershed streams. The named tributaries within the Henry Fork watershed are attributed the highest class of waters, *WS-I*, from their beginnings up to the Henry Fork Reservoir. Downstream of the reservoir, they are classified as *C ORW*.

Overall, the park contains nine named streams with an *ORW* designation. This is the state's highest designation for water quality. *ORW*, as defined by the NC Division of Water Quality, is a "classification intended to protect unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance." To qualify as *ORW*, waters must be rated excellent by the NC Division of Water Quality and have one of the following outstanding resource values:

- Outstanding fish habitat or fisheries,
- Unusually high level of waterbased recreation,
- Some special designation such as NC or National Wild/Scenic/Natural/Recreational River, National Wildlife Refuge, etc.,
- Important component of state or national park or forest, or
- Special ecological or scientific significance (rare or endangered species habitat, research or educational areas).

Protection of high water quality is an extremely important aspect of the park's role in landscape-scale conservation. A summary table of other NC Division of Water Quality classification of waters within the park boundaries as well as stream classification descriptions are included in Appendix E.

Waters classified as Trout waters require maintenance of a 25-foot vegetative buffer on both sides based on State regulation. Due to most of the park's presence within designated water supply watersheds, the Burke County Watershed Protection Ordinance permits no new development within a 30 to 100-foot vegetated buffer along these streams, depending on the level of development, "except for water dependent structures, projects such as road crossings and greenways where no practical alternative exists."

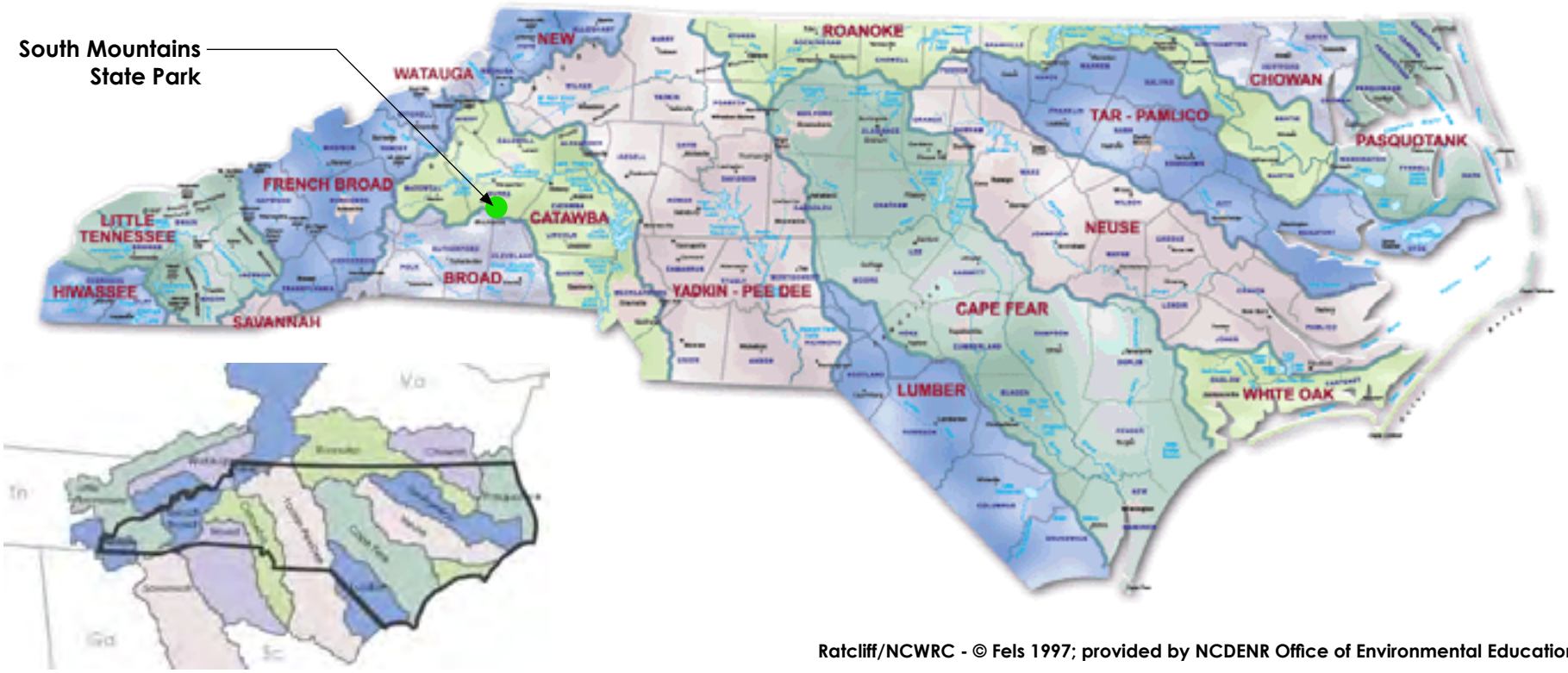
*Double Branch and Ivy Creek

Surface waters within the park are subject to jurisdictional oversight by the US Army Corps of Engineers and the NC Division of Water Quality under Sections 401 and 404 of the Clean Water Act. Rare species within the park are subject to jurisdictional consideration under state and federal laws enforced by the NC Wildlife Resources Commission, the NC Plant Conservation Program, and the US Fish and Wildlife Service.

According to the North Carolina Administrative Code, 15A NCAC 02H .1003, most development activities within the park will require a State Stormwater Permit due to the presence of Outstanding Resource Waters and High Quality Waters. Specific stormwater requirements for *HQW* areas are described in 15A NCAC 02H .1006. Stormwater requirements for *ORW* areas are described in 15A NCAC 02H .1007. Henry Fork *ORW* Area is listed in 15A NCAC 02B .0225e in the 'Listing of Waters Classified *ORW* with Specific Actions.'

Preliminary Flood Insurance Rate Maps have been issued for Burke County (dated preliminary Sep 05 2006). These maps indicate the presence of flood hazard areas only in the vicinity of the current eastern entrance into the Jacob Fork section of the park. A base flood elevation determination for specific areas should be performed during the design and construction phases for any project in the park.

Figure 9: North Carolina River Basins



Ratcliff/NCWRC - © Fels 1997; provided by NCDENR Office of Environmental Education

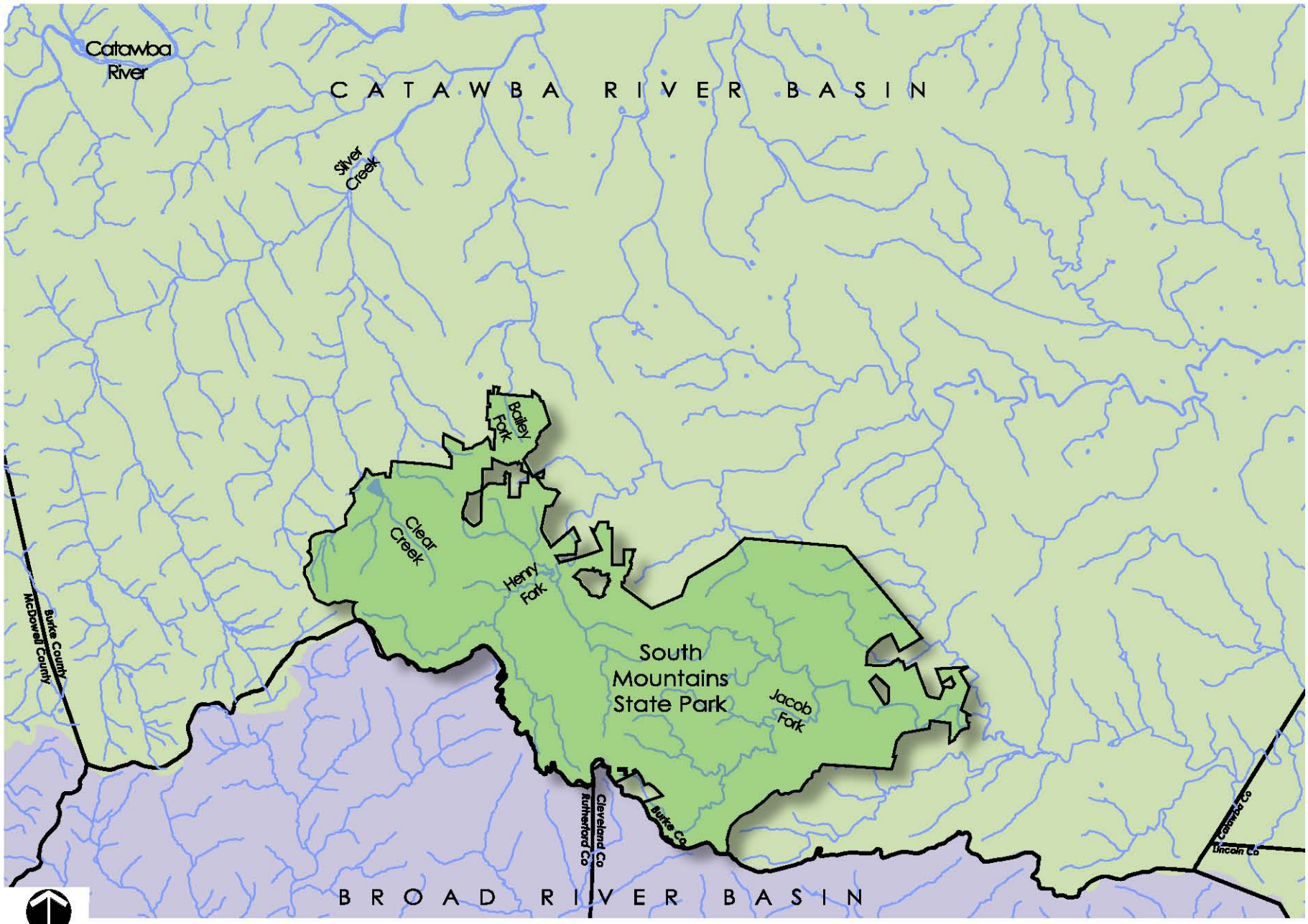


Figure 10: **South Mountains State Park Hydrologic Context I**

Hydrologic Unit, 'hu' dataset, used for boundaries and basin labels, December 1997
Catawba R. Basin water bodies from 'ctb_pl' & 'ctb_ar' datasets, dated February 2004
Broad R. Basin water bodies from 'brd_pl' & 'brd_ar' datasets, dated February 2004

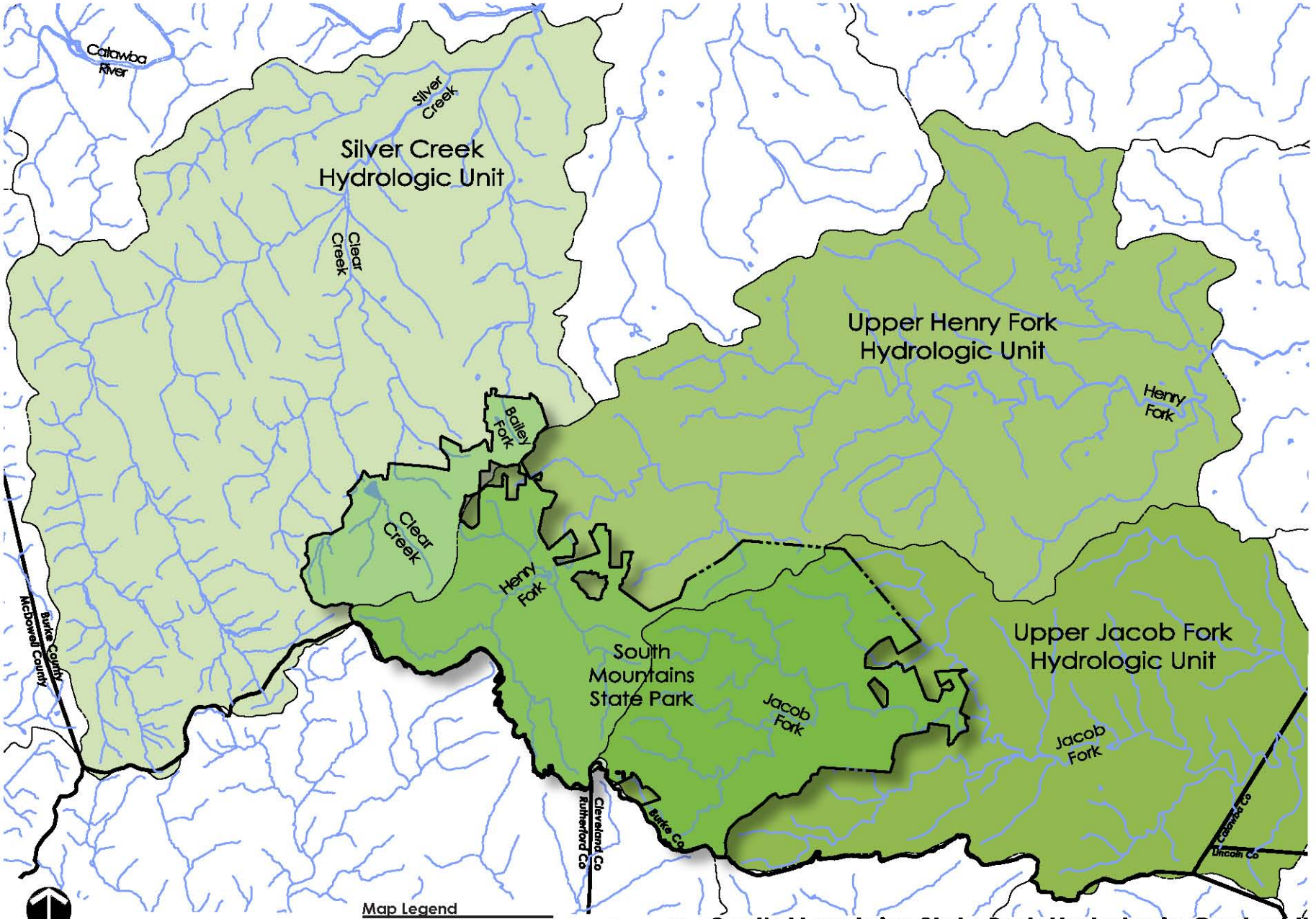


Figure 11: **South Mountains State Park Hydrologic Context II**

Hydrologic Units, 'hu' dataset, 1:24,000 scale, dated December 1997
Catawba Basin water bodies from 'ctb_pl' & 'ctb_ar' datasets, dated February 2004
Broad Basin water bodies from 'brd_pl' & 'brd_ar', dated February 2004
(Stream data within park edited based on contour data)
Hydrologic Unit labels based on major stream name leaving the unit

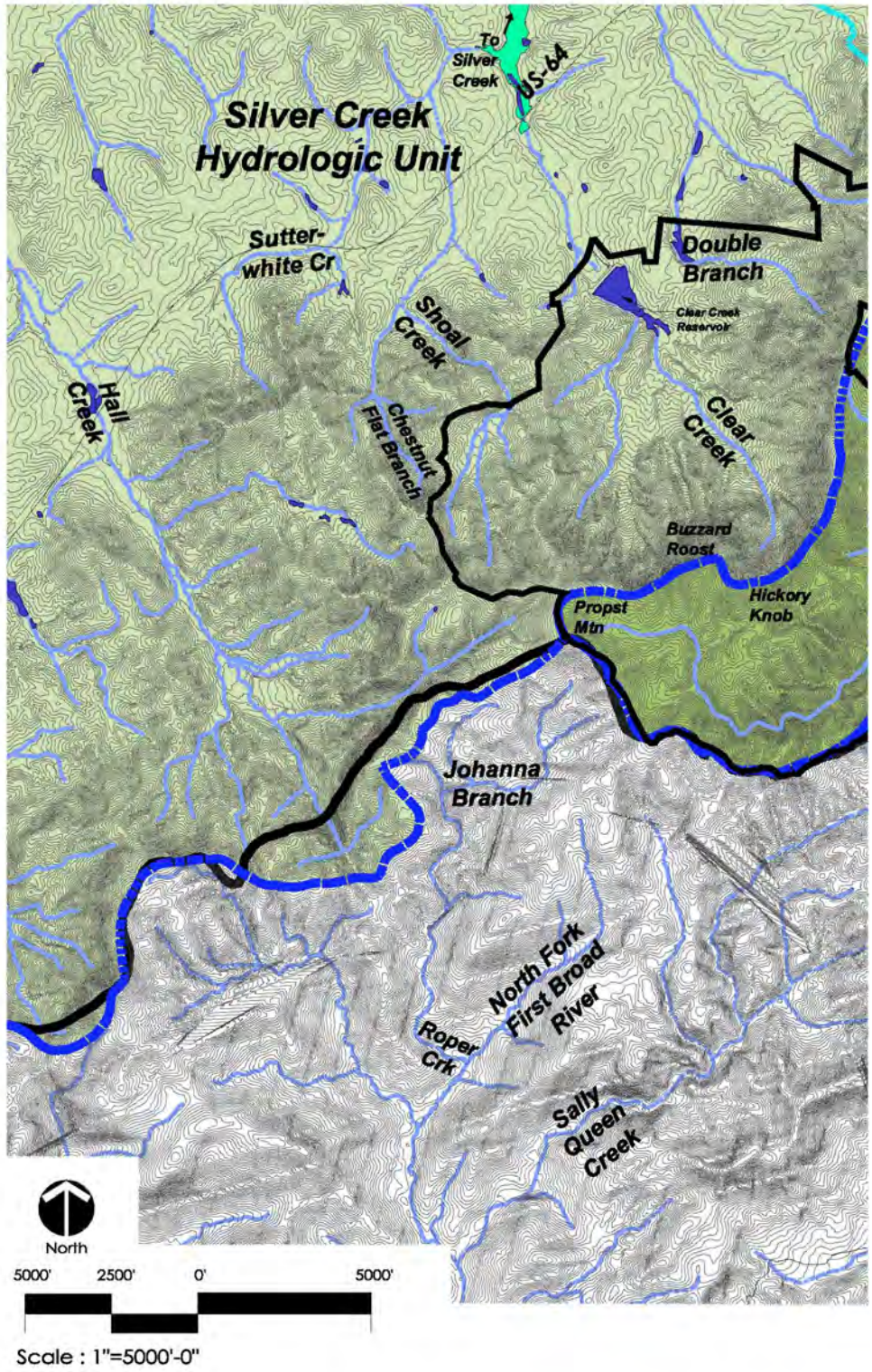
The National Wetland Inventory identifies several areas within the park boundaries. These areas are in the vicinity of the Clear Creek Reservoir, including the reservoir and areas to its southeast, an area adjacent to Double Branch also in the Clear Creek section, the Henry Fork Reservoir, and several areas to the north and west of the equestrian campgrounds along Jacob Fork. Other wetlands occur in the park that are not mapped by the National Wetland Inventory (NWI)*. Wetland delineation for specific areas should be performed during the construction design phase for any project in the park.

Jacob Fork near Hemlock Nature Trail

*According to the US Fish & Wildlife Service, "The NWI maps do not show all wetlands since the maps are derived from aerial photointerpretation with varying limitations due to scale, photo quality, inventory techniques, and other factors."

Map Legend

- Park Boundary
- Hydrologic Unit Boundary (defined by 'hu' dataset provided by NC Division of Parks and Recreation)
- Stream / Creek
- Water Body / Reservoir
- FEMA Flood Hazard Zone AE (defined as areas where Base Flood Elevations have been determined - preliminary Sept 05 2006)
- Areas identified in the National Wetland Inventory
- County Boundary
- Roads
- 20' Contours



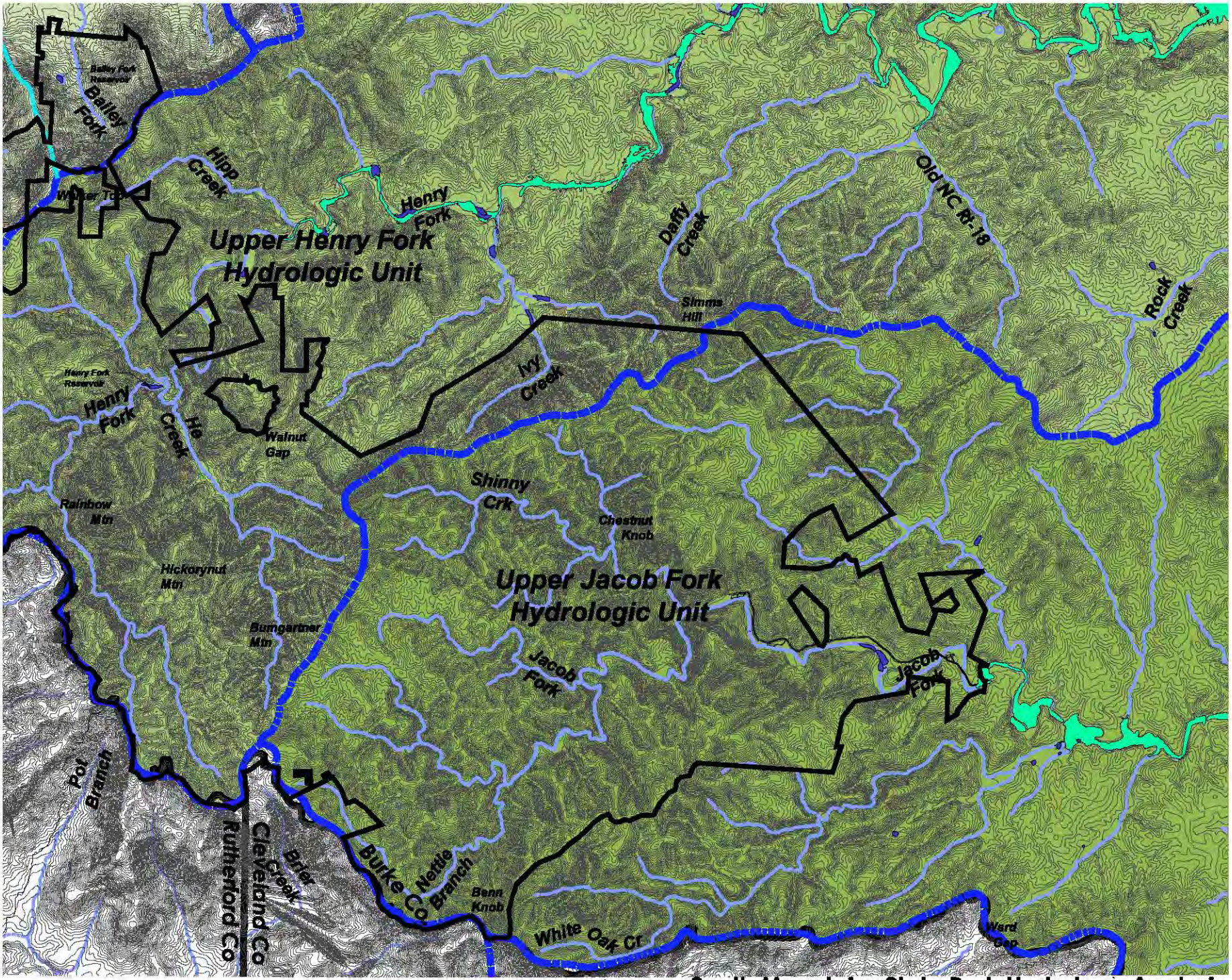
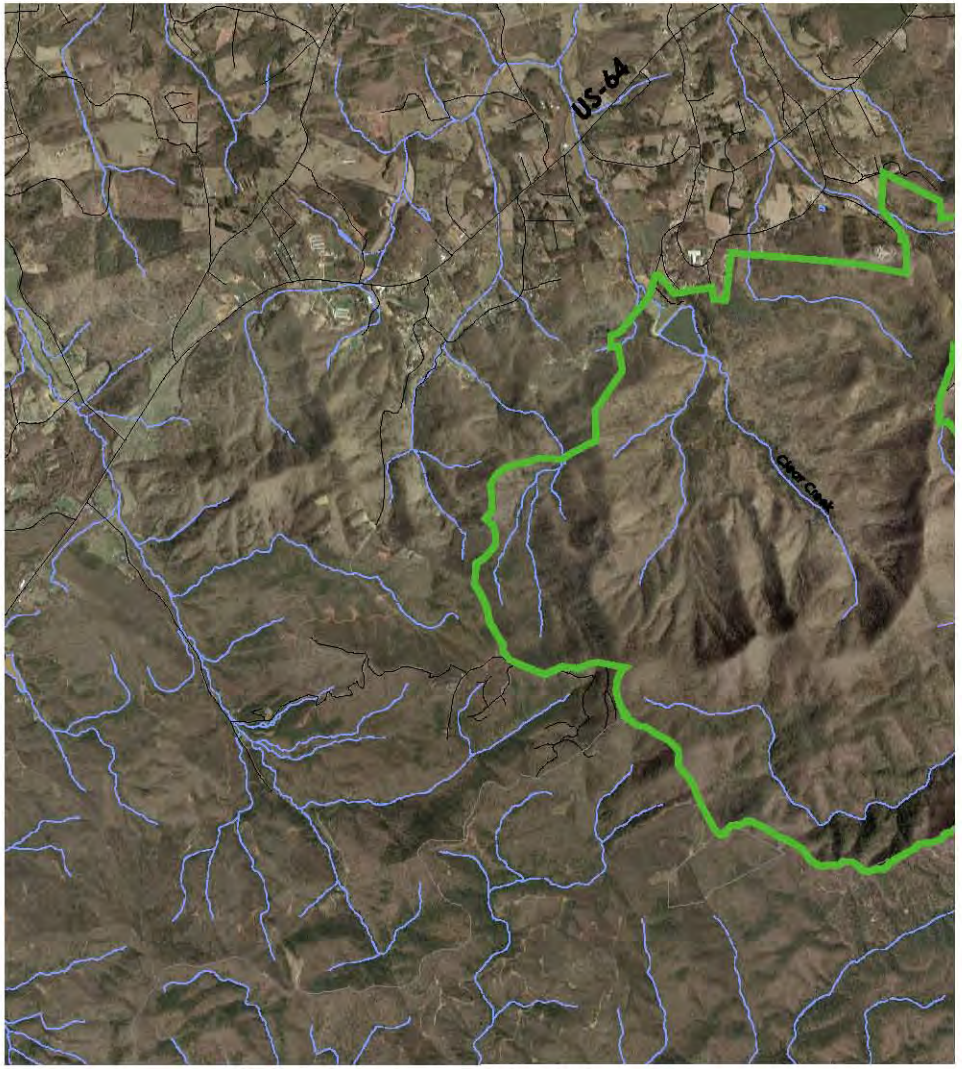


Figure 12: **South Mountains State Park Hydrology Analysis**

Catawba River Basin Hydrography data 1:24,000-scale, dated 2/27/04;
Hydrologic Units data 1:24,000-scale, dated 12/2/97 (name based on main stem of stream at base of unit);
LIDAR Contour Data, 20' Contour Interval, March 2006

Aerial View of the Park

Figure 13 represents aerial photography of South Mountains State park flown in 2005 for the development of Light Detection and Ranging (LIDAR) contour data for Burke County. This provides a literal snapshot of existing development in and around the park as well as providing a visual sense of the terrain of the park.



North

5000' 2500' 0' 5000'

Scale : 1"=5000'-0"

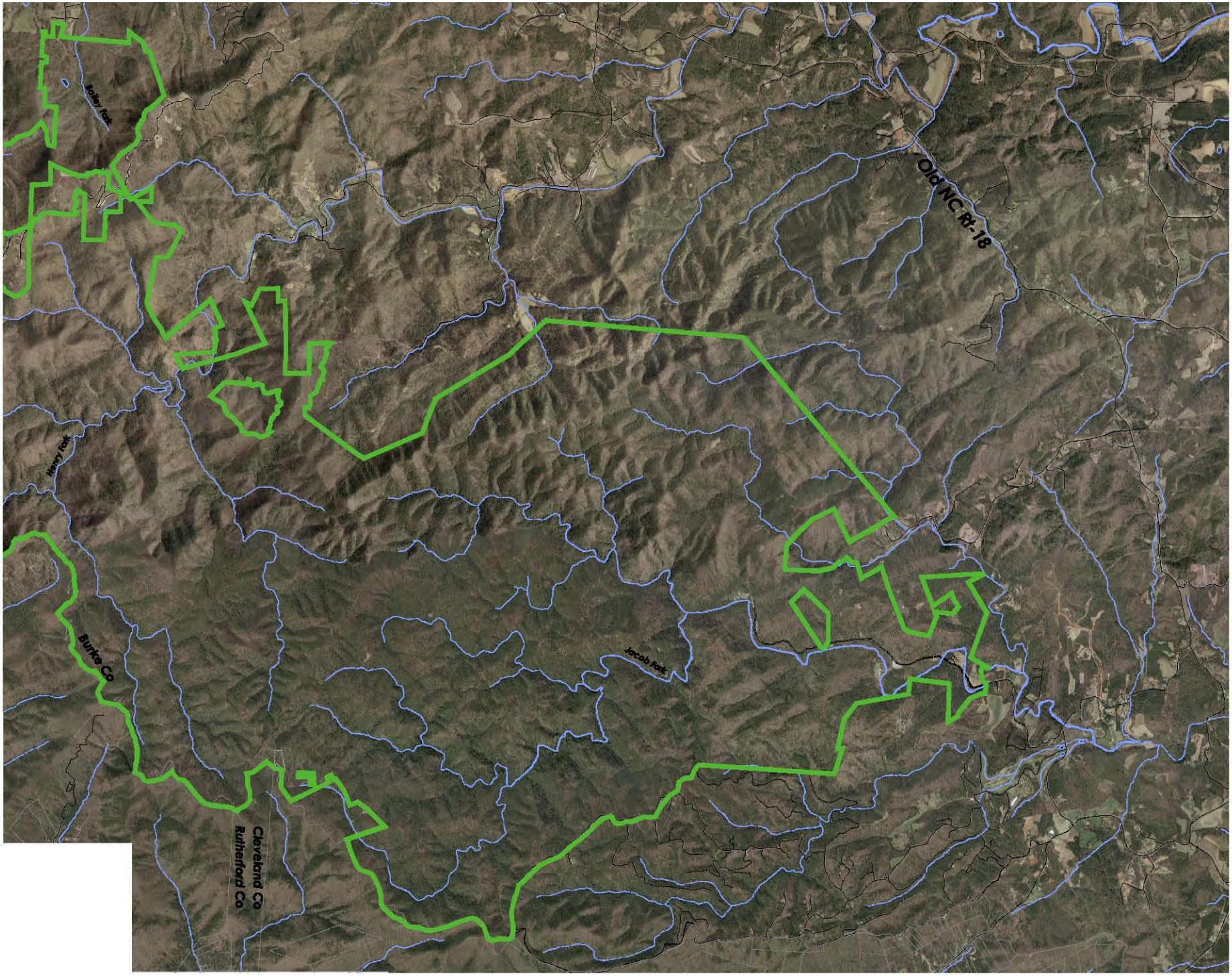
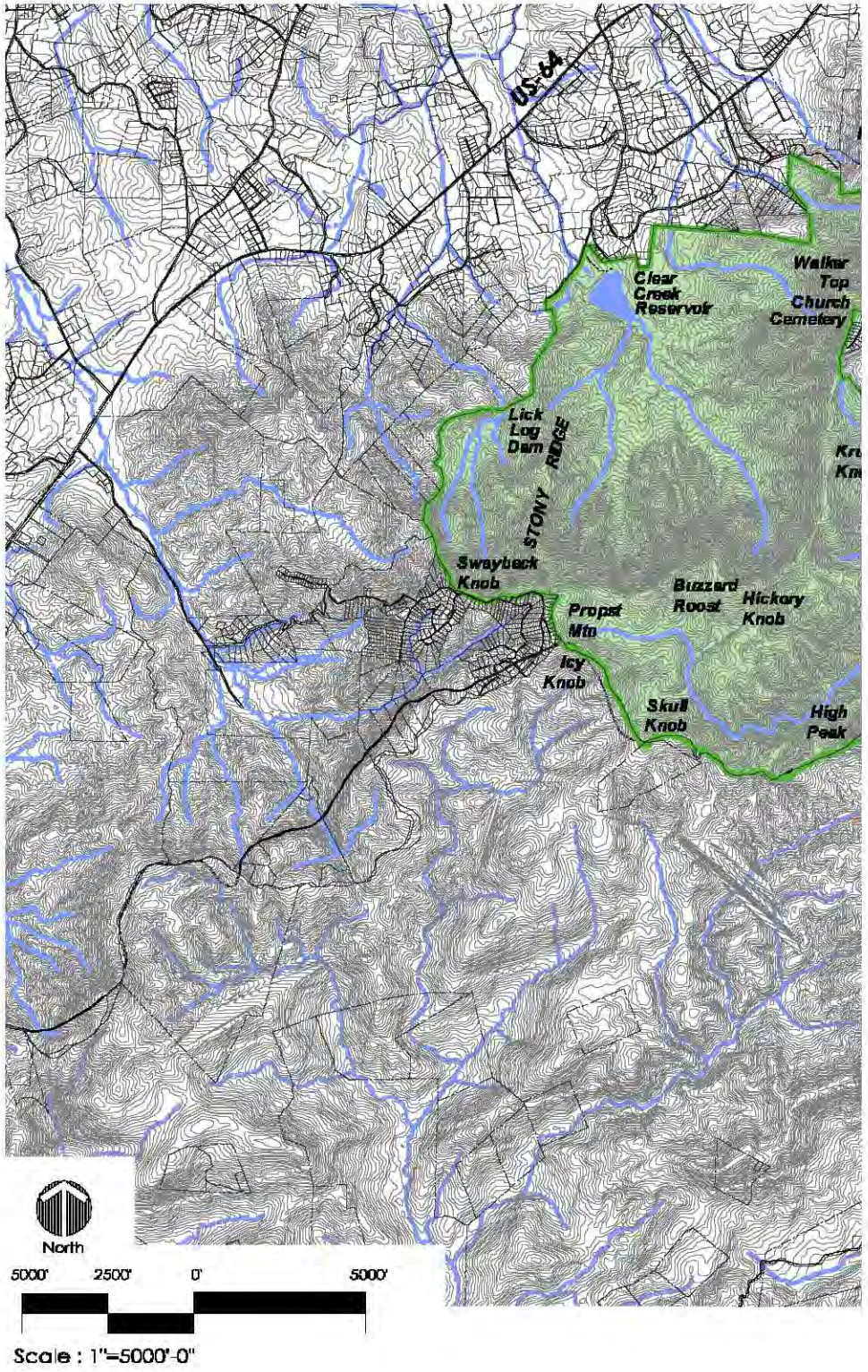


Figure 13: South Mountains State Park Aerial Documentation

2005 Aerial

Topography

Figure 14 illustrates 20' topographic contours* for South Mountains State Park and surrounding areas. The peaks and valleys and stream corridors are highly apparent. The more shear ridge line on the northwest facing slope of the Clear Creek watershed may be attributed to its aspect and more impact from stormwater erosion from western approaching storms over time.



* 2005 contour data. This data does not represent survey quality. Contours created by Light Detection and Ranging (LIDAR).

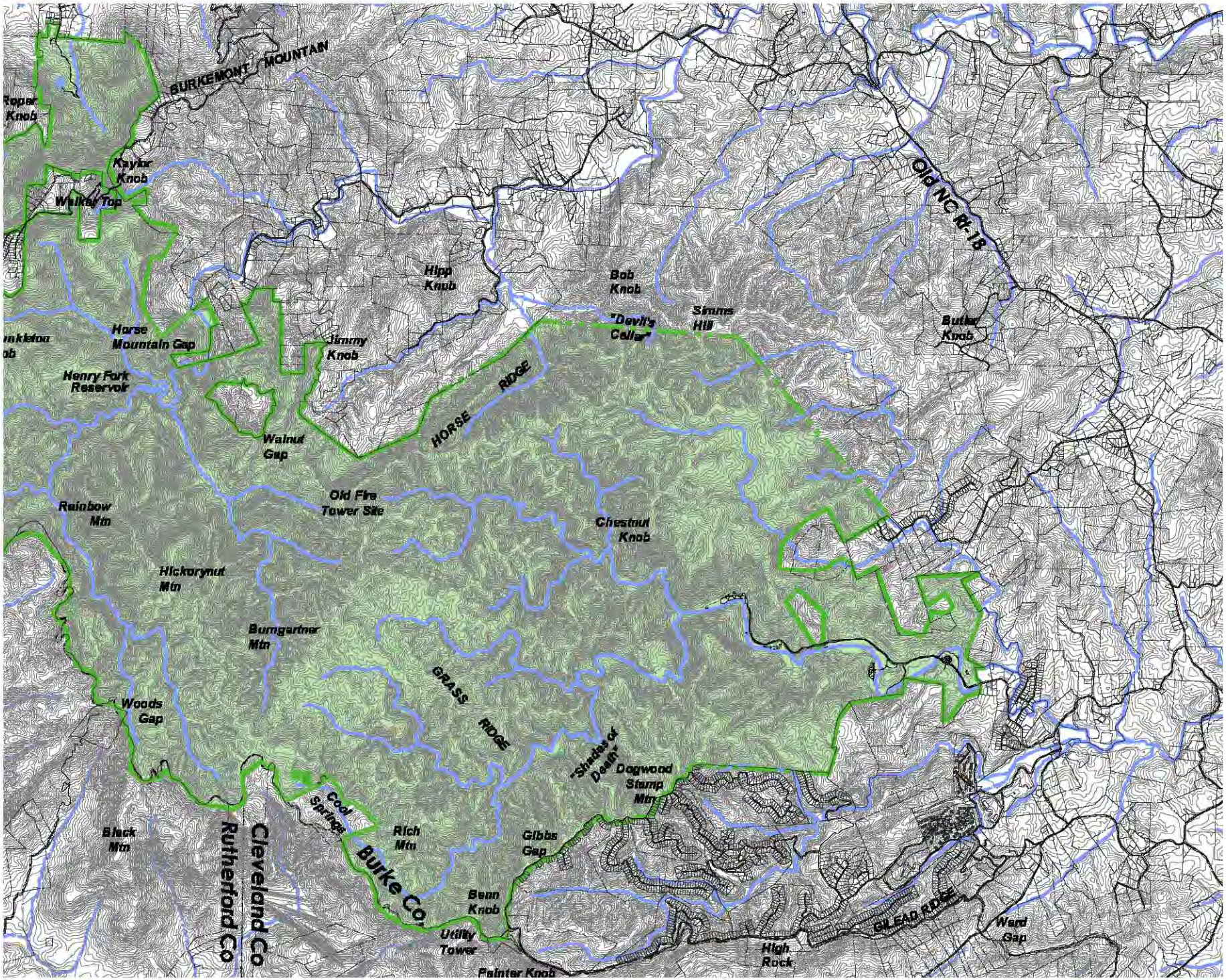


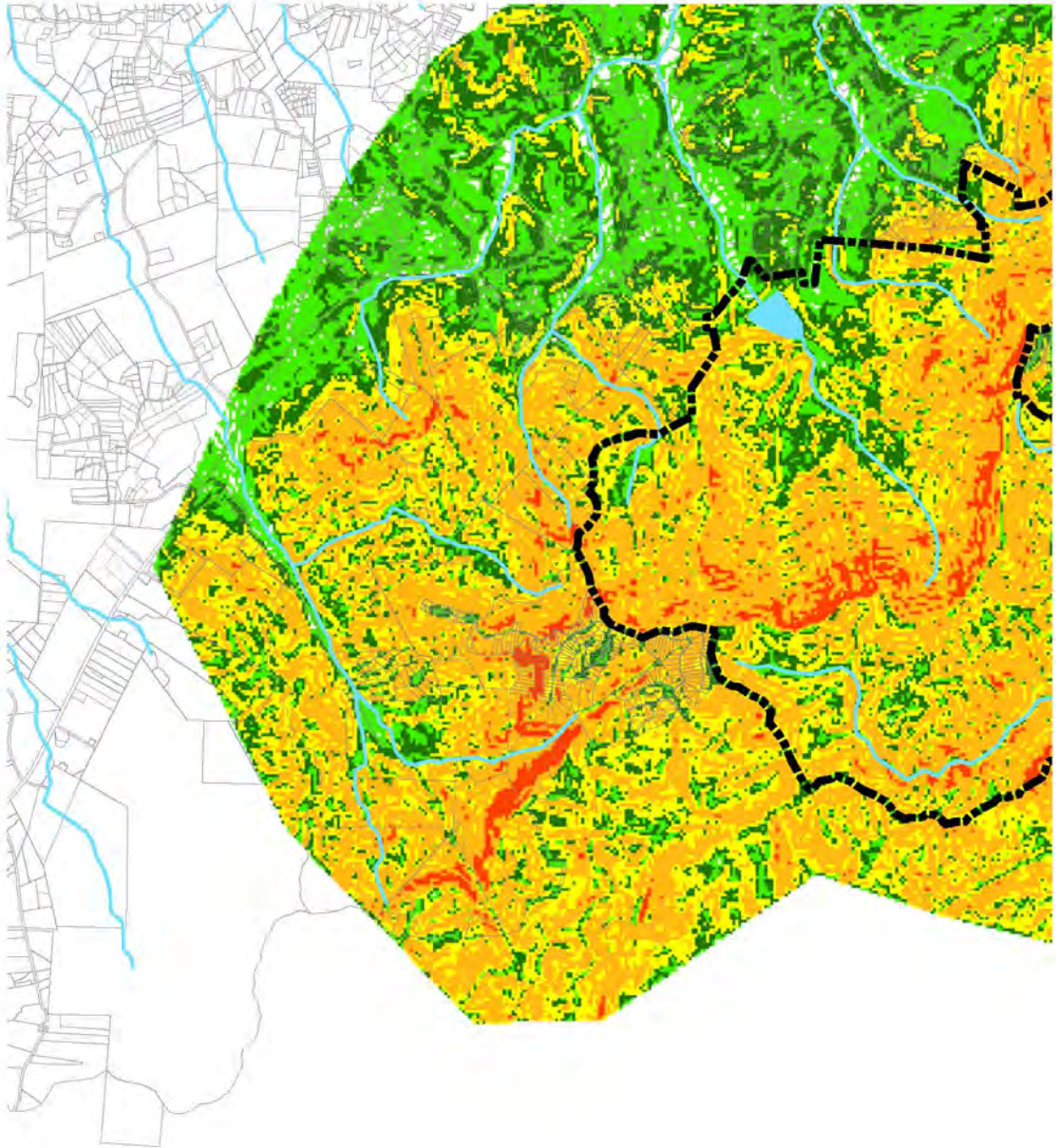
Figure 14: **South Mountains State Park Existing Topography**
LIDAR Contour Data, 20' Contour Interval, March 2005

Slope

South Mountains State Park is defined by prominent ridges, knobs, and valleys with extensive steep side slopes. These topographic land forms dominate the park landscape. Development areas with gentler slopes in areas appropriate for development have often been difficult to identify. Figure 15 illustrates slopes in percents for South Mountains State Park.

Ideally, development will not take place on slopes greater than 18%. In some cases, this objective may be difficult to achieve, as is conveyed in the map to the right where the two shades of green represent slopes less than 18%. Maximum conditions for slope with various development-related activities are listed in the legend to the right. The data used to create the slope map was the best available at the time of creation of this map. It is based on LIDAR and therefore is not survey quality. Topographic surveys should be performed during the construction design phase for any project in the park.

Steep slopes on the upper portion of the Clear Creek watershed



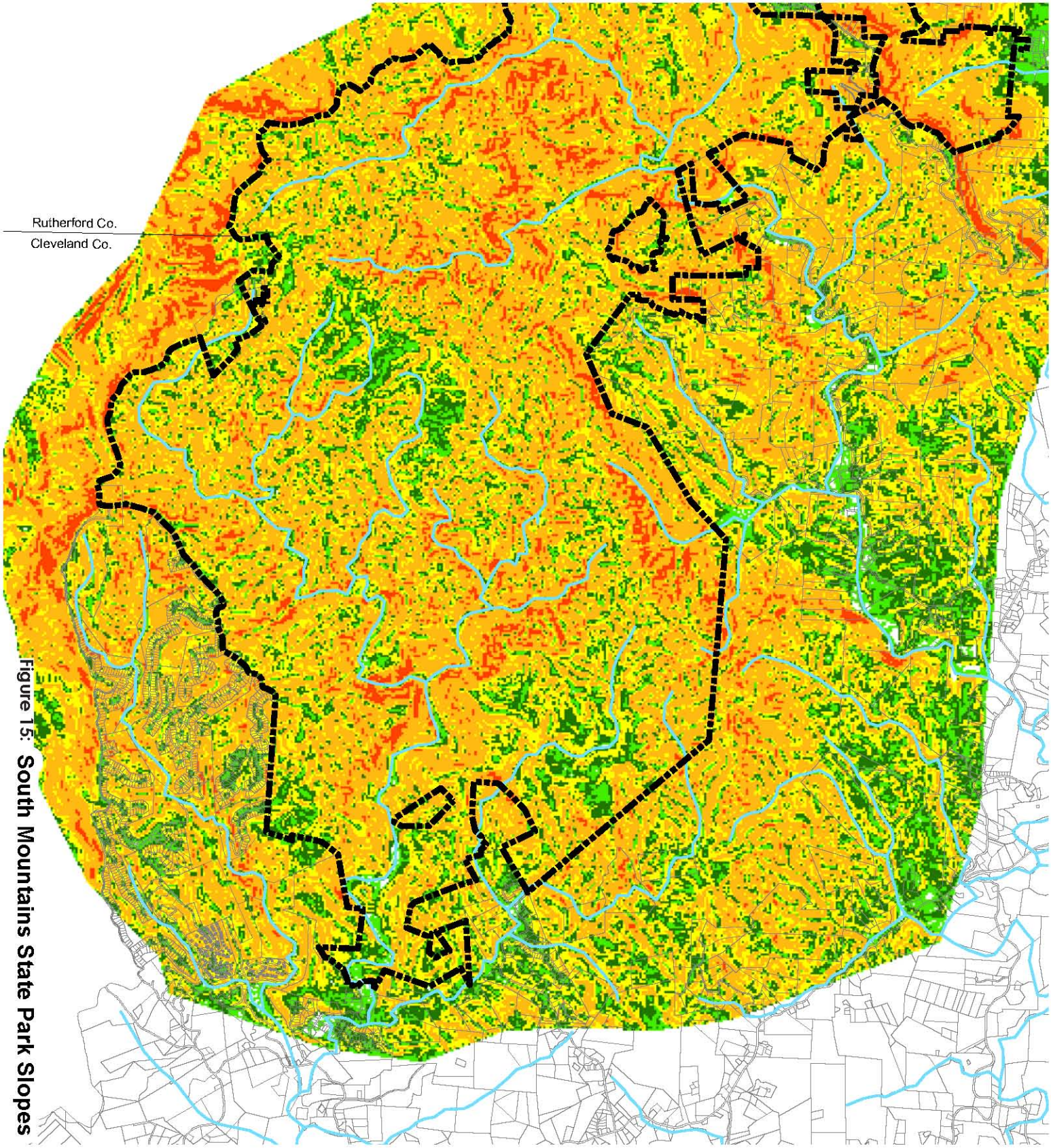


Figure 15: South Mountains State Park Slopes

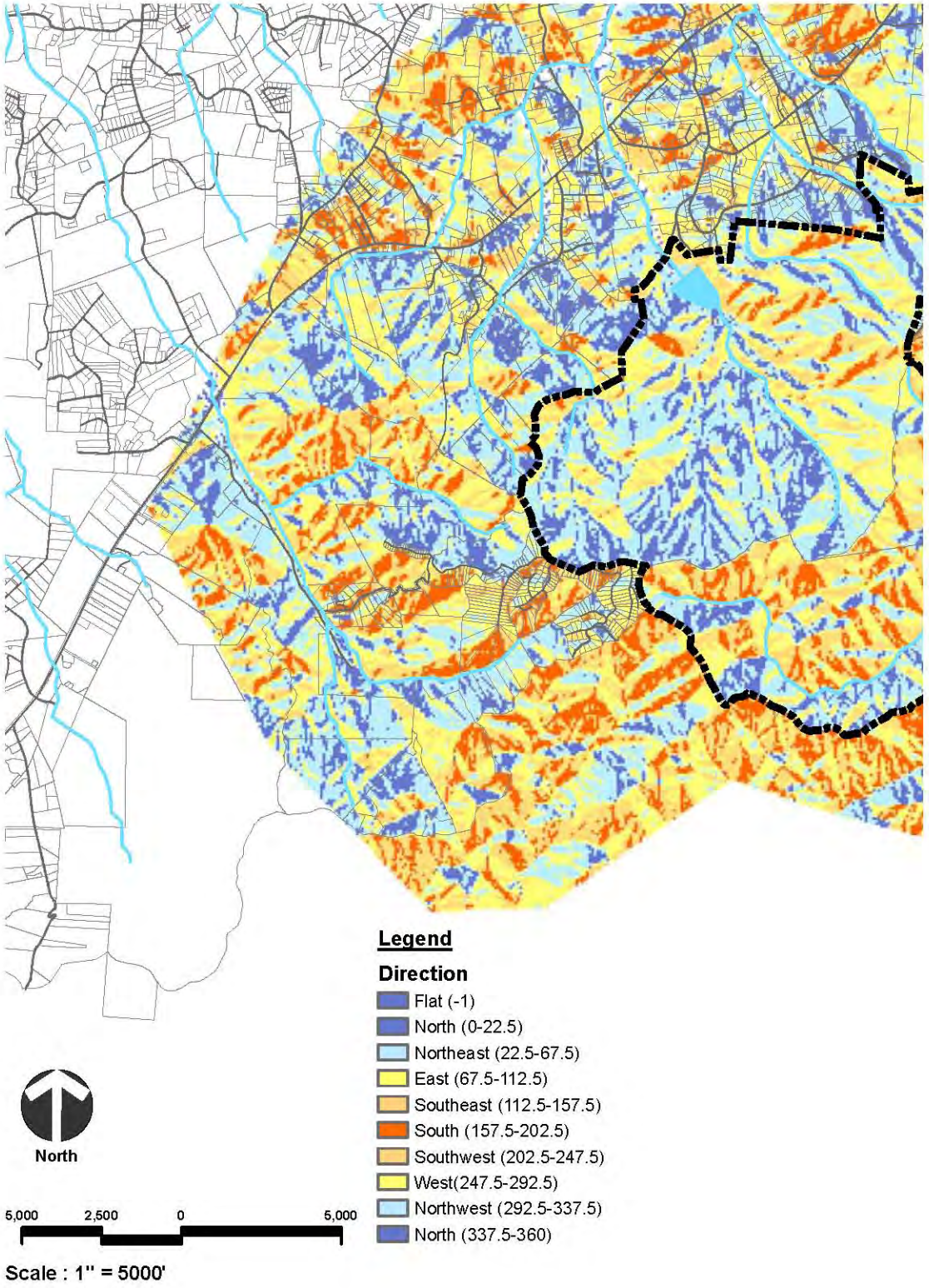
Aspect

The direction that land faces impacts vegetative communities that grow upon them, as well as movement of animals based on the vegetative food sources available in these areas. Due to differences in vegetation and microclimate, it also impacts burn rates and heat levels during controlled burn and wildfire events.

Figure 16 illustrates aspects in South Mountains State Park. Generally, southerly aspects are represented by yellows and oranges, and northerly aspects by blues.

In South Mountains State Park, park staff has recognized differences in burns in prescribed burn areas in the park relative to aspect. It was reported that burns in areas with southerly aspects burn hotter and faster than those on more northern aspects. This was attributed both to solar angle as well as vegetative material present.

Aspect is also relevant when siting buildings and public use areas. Southerly aspects are ideal for passive solar, energy-efficient building design as well as public spaces used in the winter time. Shading through structure or tree canopy should be provided to public spaces with southerly aspects that are also used in the summer.



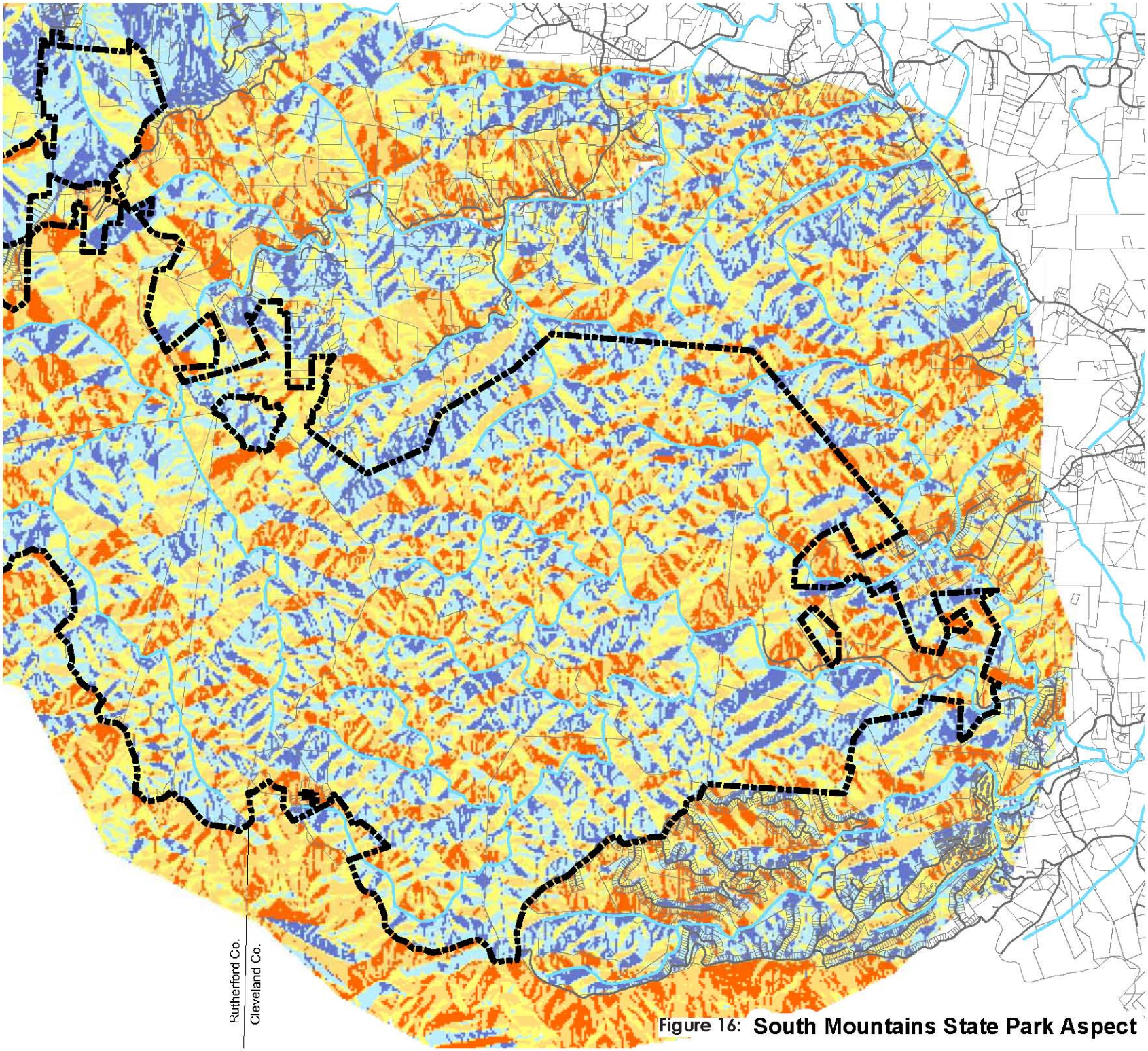


Figure 16: **South Mountains State Park Aspect**

Elevation

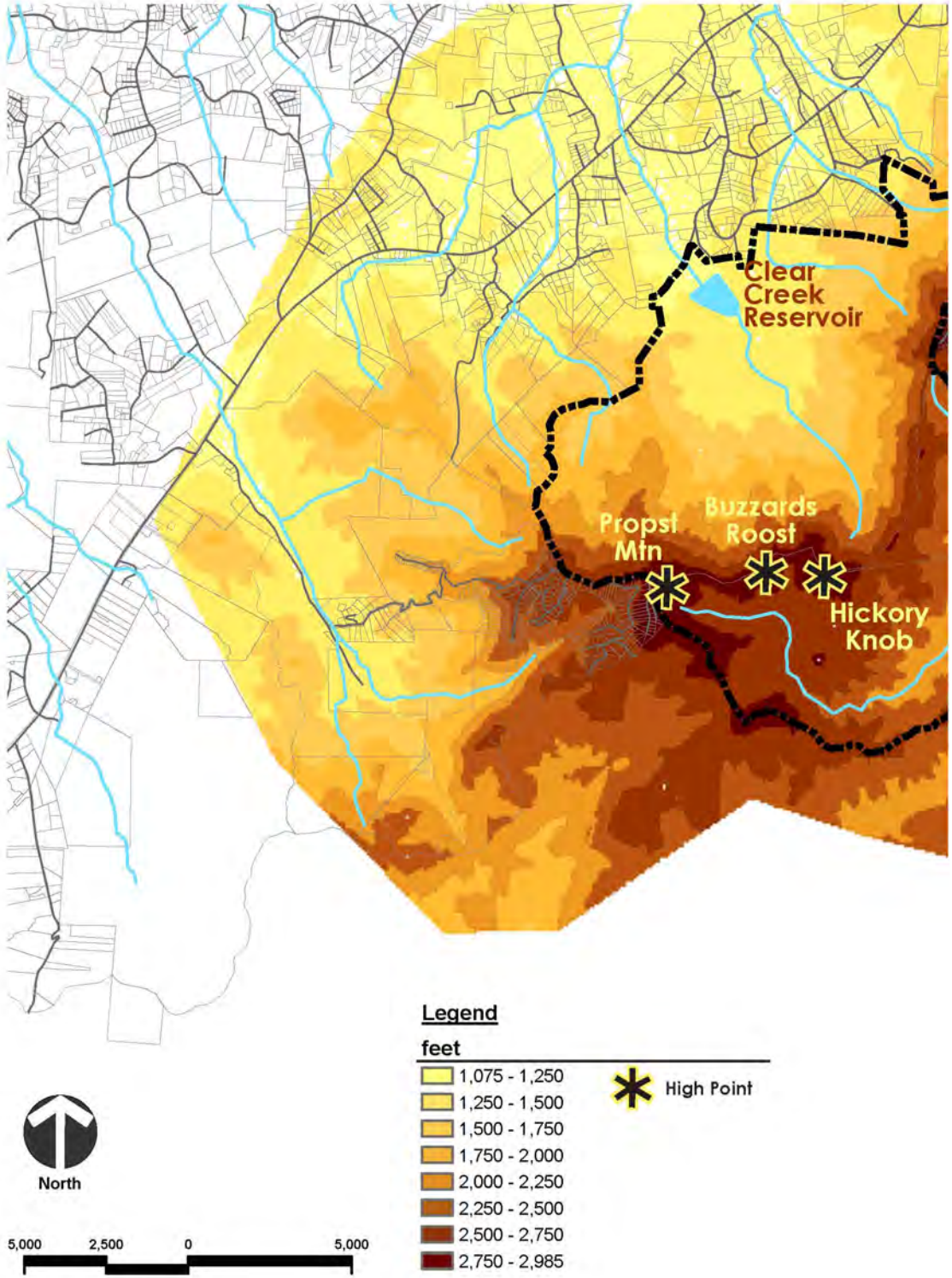
Figure 17 illustrates elevation ranges within South Mountains State Park. The elevations within the park range from a low of approximately 1,140 feet in the Jacob Fork stream bed to a high of approximately 2,990 feet. The highest points in the park exist along the ridge line between the Clear Creek and Henry Fork Watersheds. These peaks include Propst Mountain (~2,960'), Buzzard Roost (2,980'), and Hickory Knob (~2,960')*. The slopes that relate to these high elevations result in extreme challenges for trail connections between the two watersheds.

Walker Top is located on Burkemont Road along this same ridge line. It is part of a park inholding. It represents another high point along this ridge and is the location of a communication tower. Other high points in the park include Rainbow Mountain and Hickory Nut Mountain in the Henry Fork watershed, and Benn Knob on the ridge line of the Jacob Fork watershed.

Clear Creek Reservoir is in the lower elevations of the Clear Creek section of the Park. The high water elevation of the reservoir is anticipated to increase by about 10 feet above its current level with completion of the dam renovation project underway during the creation of this document. Any further planning and design of facilities within the vicinity of this reservoir should take into account this future change in high water line.

View of South Mountains from Chestnut Knob

* Elevations based on USGS 7.5 minute quadrangle maps. This data does not represent survey quality.



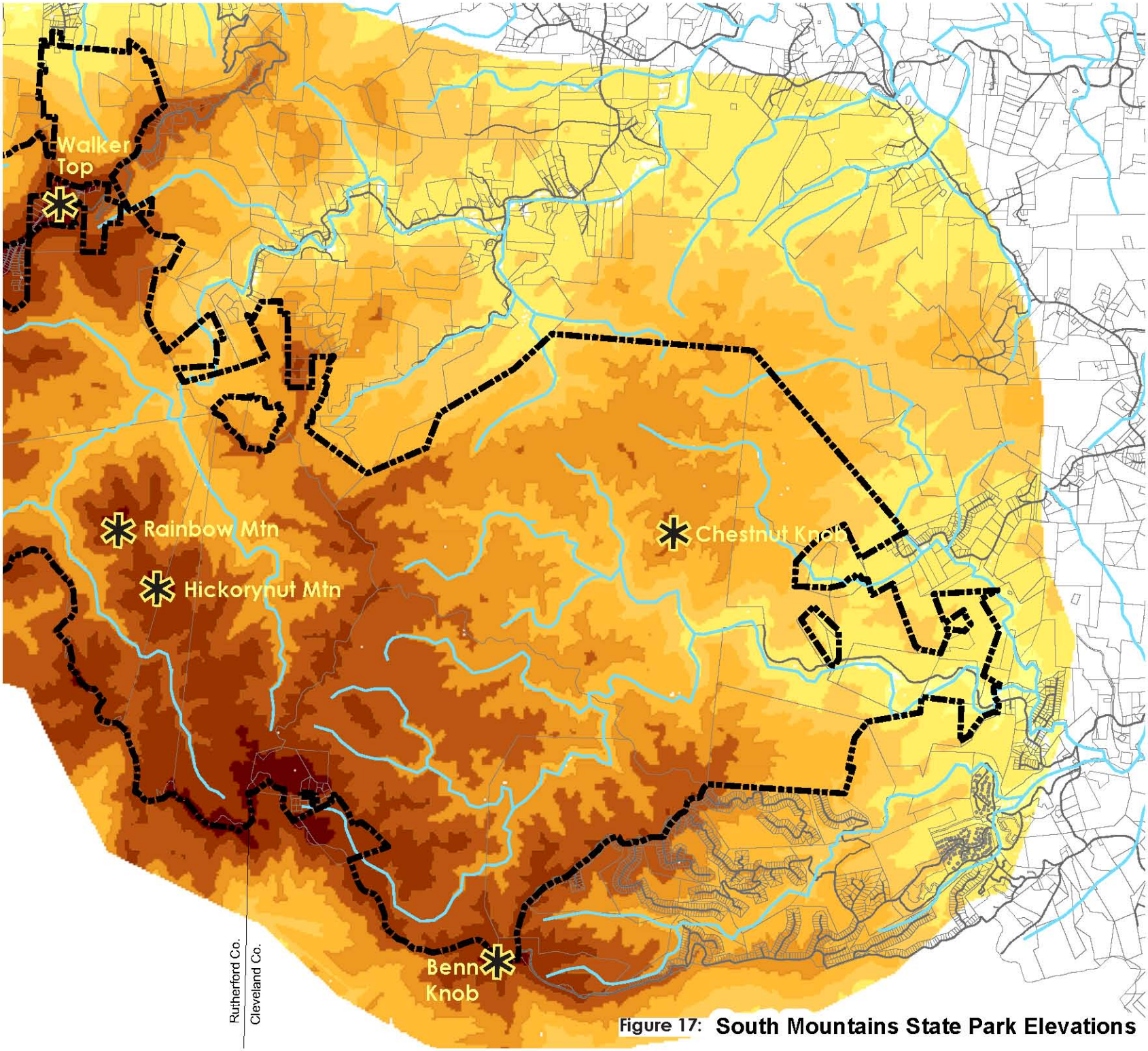


Figure 17: **South Mountains State Park Elevations**

Soils

Detailed digital soil data for Burke County, dated 2004, was provided by the Burke County Department of Planning and Development (illustrated in Figure 18). Detailed information on the soil data, not yet published, was provided by the Morganton Field Office of the Natural Resources Conservation Service.

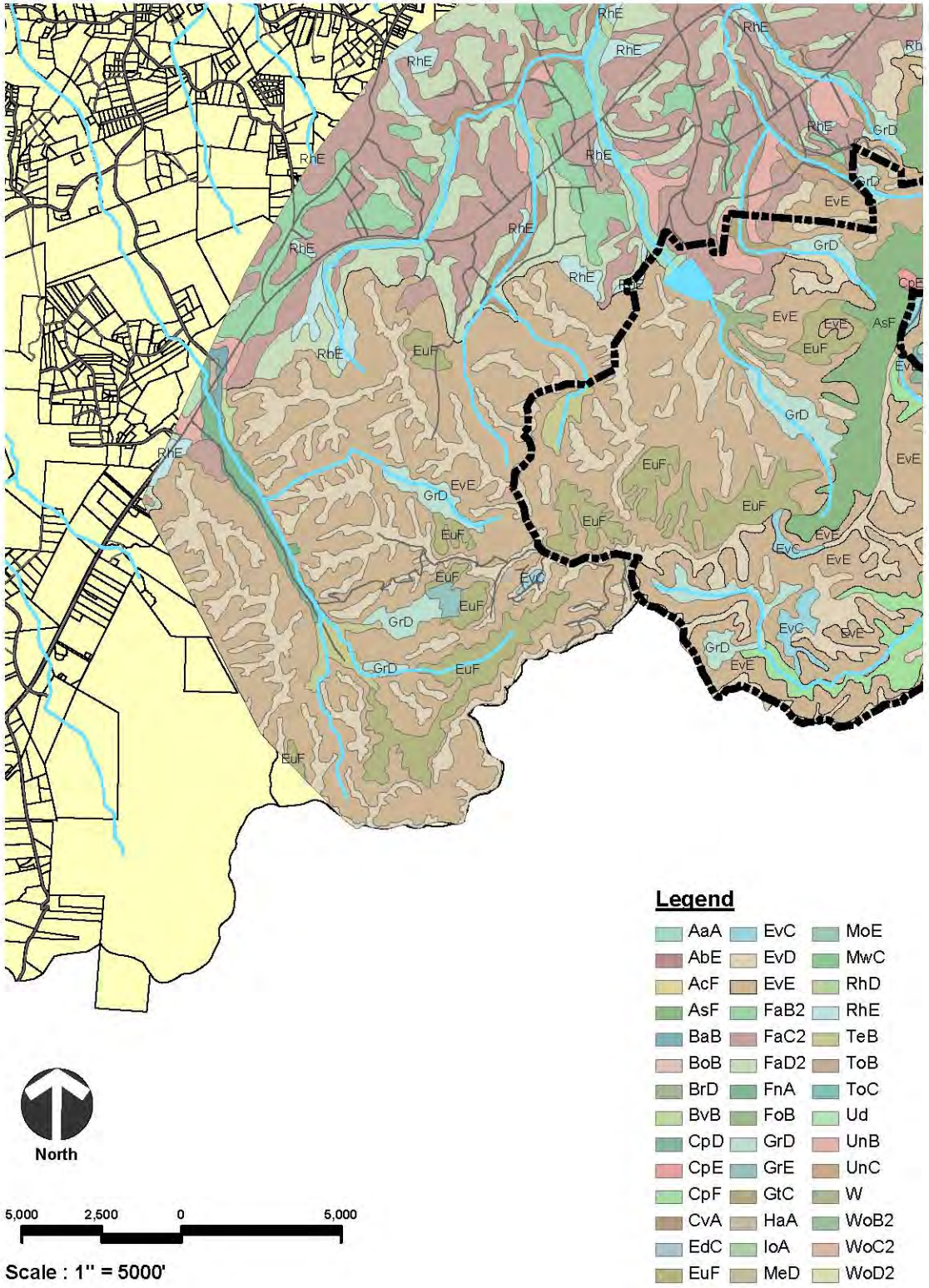
Twenty-six soil units are represented in and around the current South Mountains State Park boundaries. The predominant soils in the eastern portion of the Jacob Fork section of the park are of the Edvard-Cowee complex. Predominant soils in the western portion of the Jacob Fork section and in the Henry Fork section are of the Cliffield-Pigeonroost complex. Predominant soils in the Clear Creek section are also of the Edvard-Cowee complex, with Ashe-Cleveland-Rock outcrop complex soils approaching the ridge with the Henry Fork section.

Seven of the identified soil types within the park are considered hydric. These soils are noted as existing in floodplain landforms.

All of the soils, except two, have a 'somewhat limited' or 'very limited' status for campsites/picnic areas/playgrounds. Limitations on these soils are primarily due to steep slopes, stones, or poor drainage.

All soils are considered 'somewhat limited' to 'very limited' for sewage disposal. Also, all are considered 'somewhat limited' to 'very limited' for local road construction and excavation.

More detailed soils analysis will be required during the design and development of any new facilities within the park.



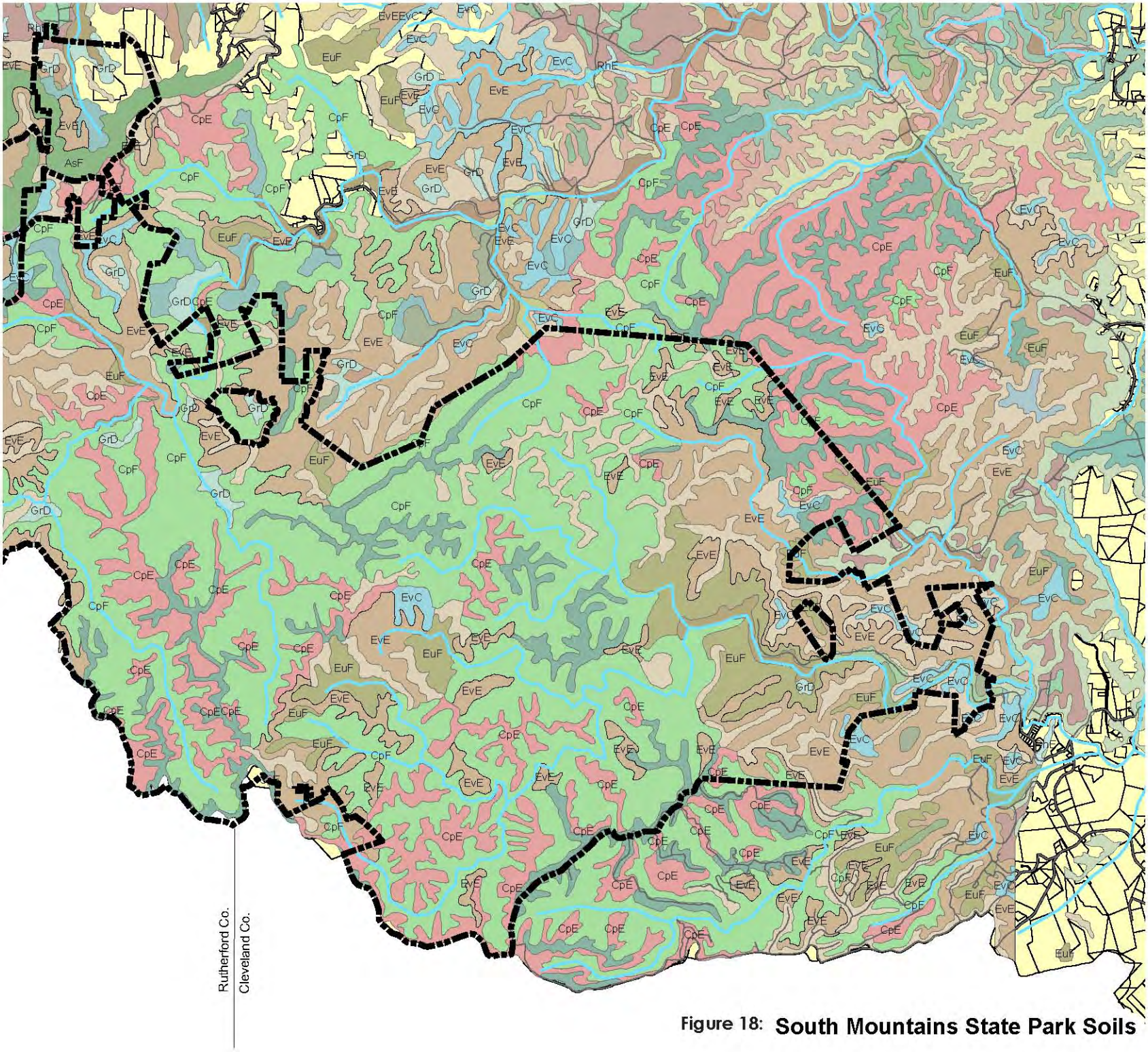


Figure 18: **South Mountains State Park Soils**

Geology

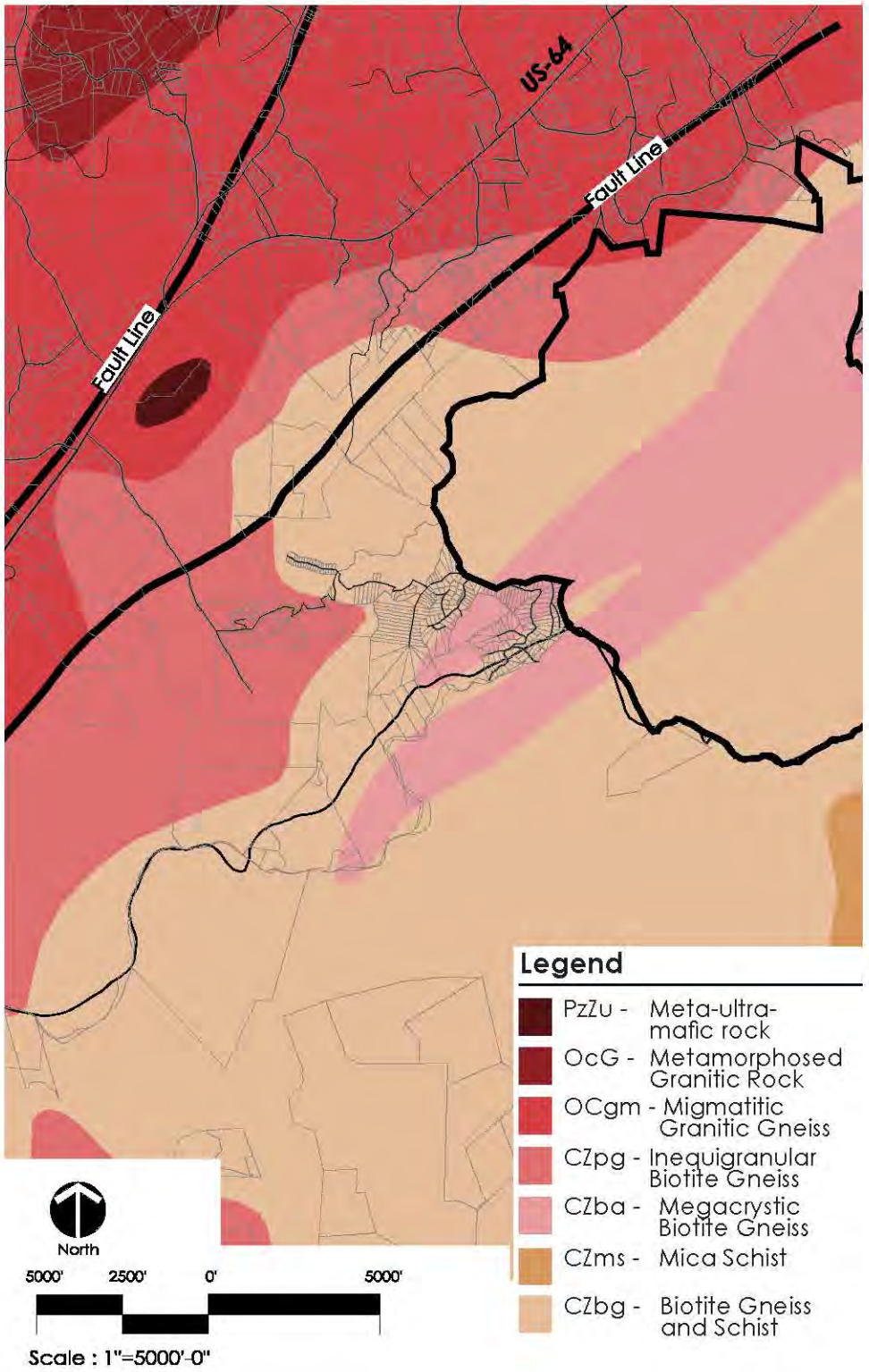
South Mountains State Park is situated in the inner Piedmont geologic division of the State of North Carolina. It is within the Chauga Belt Anticlinorium (*North Carolina Geologic Survey, 1985*).

NC Geological Survey (*1998*) characterizes the geology of the park and surrounding areas as primarily mica schist and metamorphosed granitic rock with some areas of biotite gneiss and schist in the Jacob Fork section of the park, primarily mica schist and biotite gneiss and schist in the Henry Fork section of the park, and primarily biotite gneiss and schist and megacrystic biotite gneiss in the Clear Creek section of the park, with areas of inequigranular biotite gneiss and migmatitic granite gneiss in the immediate vicinity of the Clear Creek Reservoir and the Bailey Fork Reservoir. Figure 19 illustrates the geology of South Mountains State Park.

The 1998 data also indicate a geologic fault to the immediate northwest of the Clear Creek Reservoir, paralleling Highway 64 between the park boundary and Highway 64.

More detailed mapping of a portion of the park was performed by a University of Tennessee graduate student in 2001 (*Bier, 2001*). This study provides more detail on the types of schists, gneisses and granites within a portion of the Jacob Fork and Henry Fork sections of the park. According to Tyler W. Clark, P.G., with the NC Geological Survey, this data does not indicate any geological constraints to any development activities within the park (See Appendix F).

Due to the rocky nature of this area, more geotechnical studies may be required during the construction design phase of any new development.



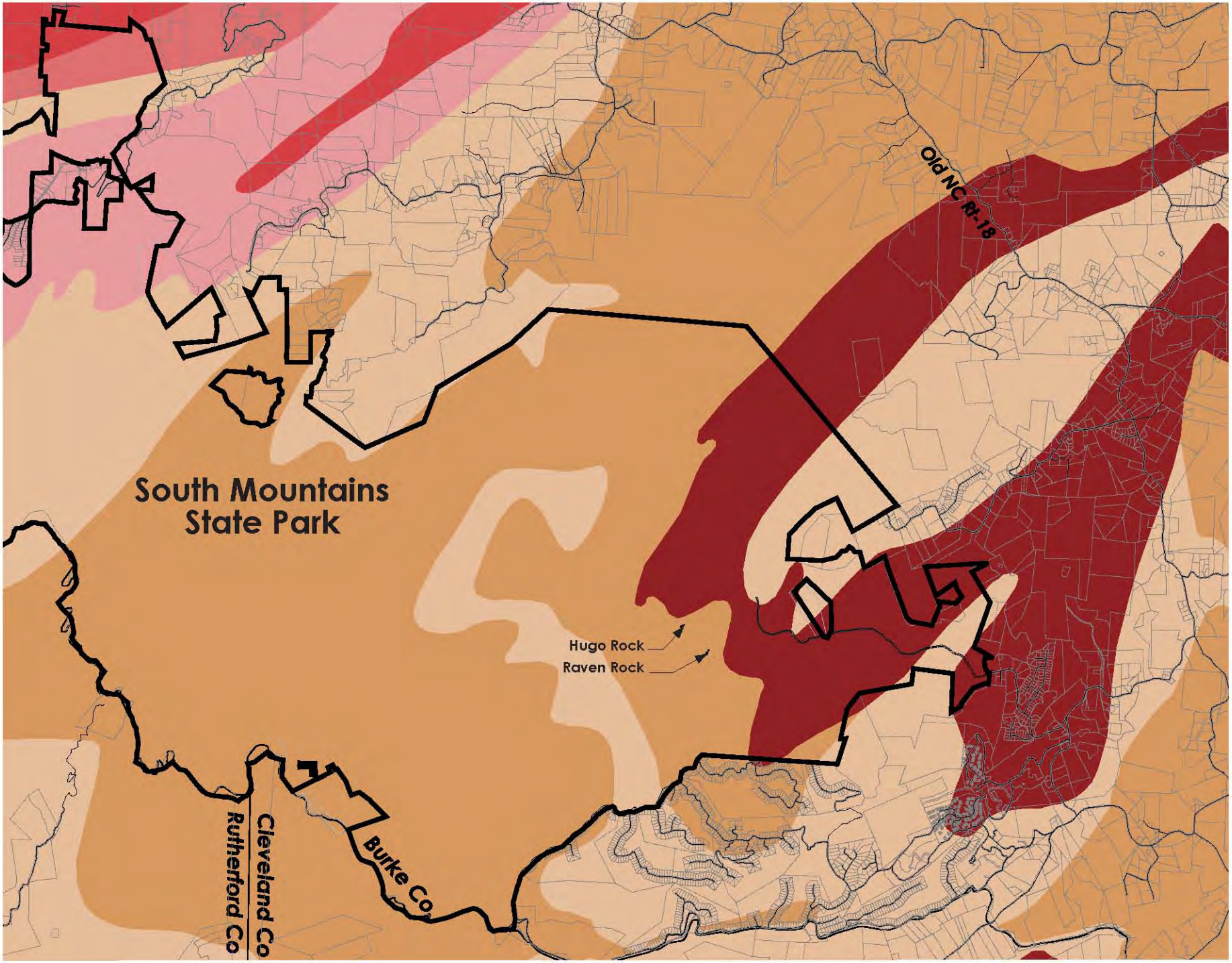


Figure 19: **South Mountains State Park Geology**
NC Geological Survey, Geol GIS Coverage, 1:500,000 scale data, December 1998

Conservation of Flora and Fauna

The South Mountains are an outlying range located east of the Blue Ridge Escarpment. Although the range's highest elevation is only around 3,000 feet, its location has resulted in an unusually diverse combination of Piedmont and mountain habitats.

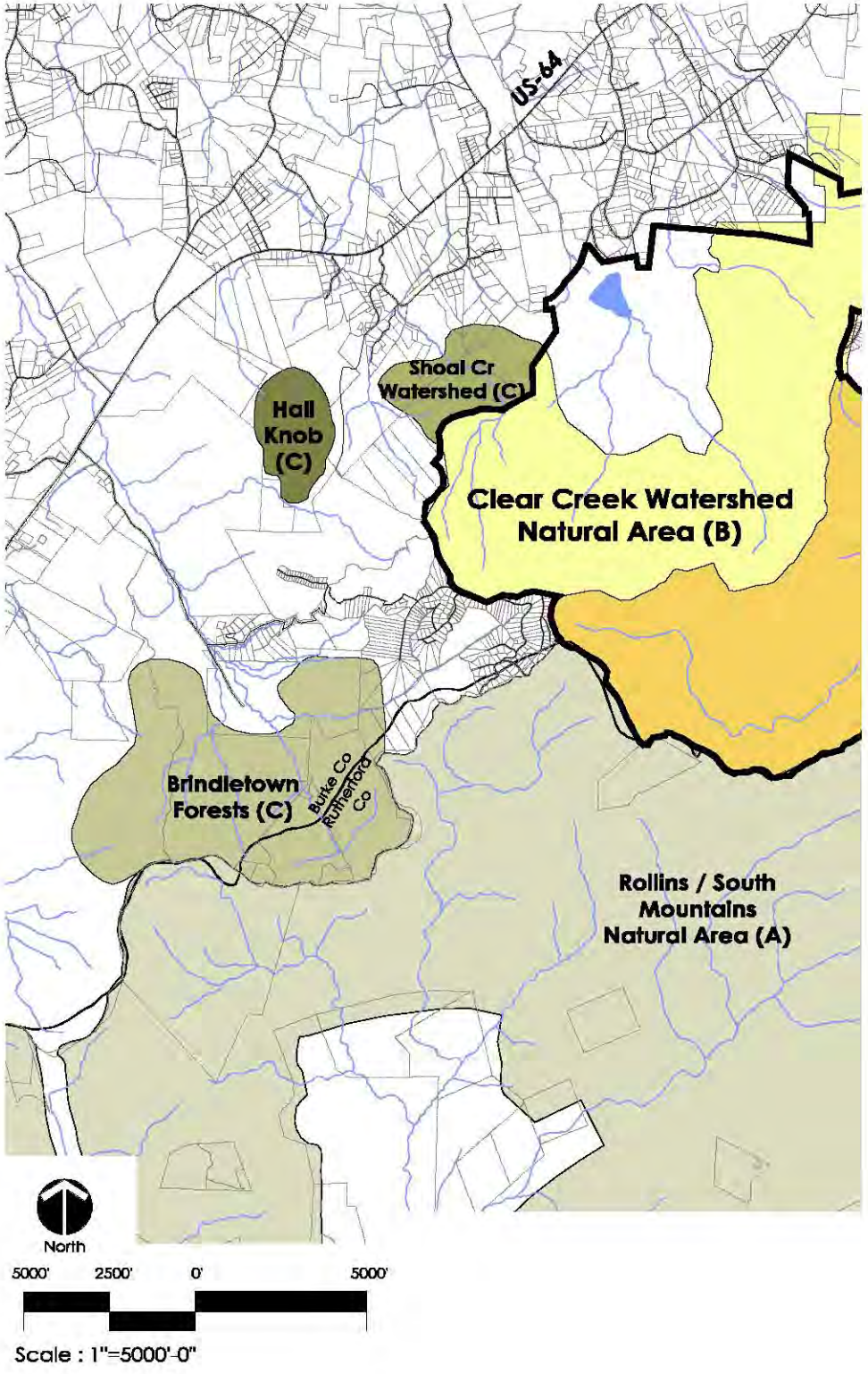
The South Mountains have been described as a "…curious crossroads in nature….", and its unusual geographic location has allowed lowland and mountain species to occur in improbable combinations. Numerous unusual plant species, many of them rare and at the limits of their natural ranges, converge on the range from all directions. Biologists have documented over 800 plant species in and around the park, including over 100 state-listed rare species, and the range's biodiversity is little-matched in North Carolina. It is believed that well over 1,000 plant species eventually will be documented, making the South Mountains Range and the park a center of biological diversity that is of national importance (*Moye, 1994*).

Significant Natural Heritage Areas, Rare Species, and High Quality Natural Communities

South Mountains State Park encompasses all or part of six significant natural heritage areas. The NC Natural Heritage Program defines significant natural heritage areas as terrestrial or aquatic, with significance based on the presence of rare species, rare or high quality natural communities, or other important ecological features.* Significant Natural Heritage Areas are ranked from level 'A' (national significance) to level 'D' (local significance).

Figure 20 illustrates the significant natural heritage areas within the park and its nearby surroundings. The three largest natural areas in South Mountains State Park (Clear Creek Watershed Natural Area, Henry Fork Watershed

*The North Carolina Natural Heritage Program notes that Significant Natural Heritage Area information can quickly become outdated. Therefore verification of information should take place before use of the data set in future design phases of a project to ensure data currency.



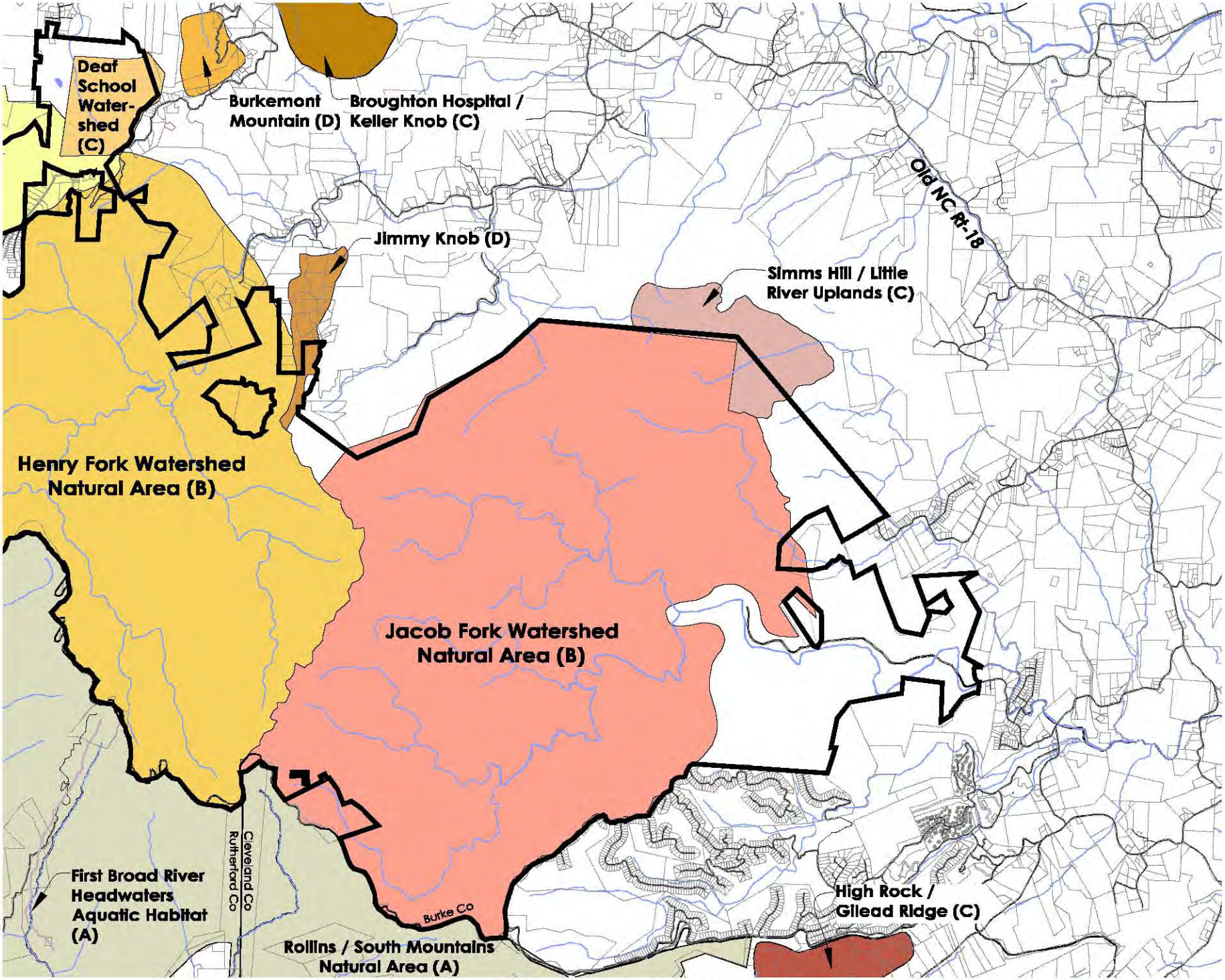


Figure 20: **South Mountains State Park Significant Natural Heritage Areas**

SNHA GIS Coverage, data dated January 2006
Hall Knob data revised July 2007

Natural Area, and Jacob Fork Watershed Natural Area), areas of which cover a large part of the park land, are of *state* significance as a natural heritage area (level 'B'). Level 'B' sites are defined as containing occurrences of plants, animals, exemplary or high quality natural communities, or important animal assemblages within the state that are not already considered of national significance. The Deaf School Watershed on the northwest side of the park is a level 'C' natural area. Level 'C' sites are defined as "the best occurrences within a given Priority Region that are not already considered of national or state significance."

To the west of the park property are the Hall Knob and Shoal Creek Watershed natural areas. These areas are partially located on property included in the park acquisition plan and are considered to be of regional significance.

Jimmy Knob, partially located inside the park's northern boundary and also partially located on property in the park acquisition plan, is a level D natural heritage area, considered of local significance. The Simms Hill/Little River Uplands (level 'C') is located to the northeast of the Jacob Fork section and is included in the park acquisition plan.

Oakley (*2002*) provides a recent, thorough description of the three major natural areas within South Mountains State Park and the significant natural areas included in the park acquisition plan, including important, rare and significant species and natural communities within these natural areas. The special status species and high quality natural communities in each area within the park are summarized in Table 4. The natural area descriptions follow.

The Jacob Fork Watershed Natural Area is described as an "almost entirely forested ecosystem" and "a topographically complex area of narrow ridges, ravinelike valleys, and steep slopes with very little flat land." The Henry Fork Watershed Natural Area is "rugged and quite convoluted by ridge lines, peaks, slopes, and coves." The Clear Creek Watershed Natural Area "covers a three mile-long expanse of well-defined cove, slope, and spur ridge topography which culminates at several summit peaks." The Deaf School Watershed consists of "northwest-facing slopes, spur ridges, and coves along the western end of Burkemont Mountain."

*NCNHP notes that these data can quickly become outdated. The NCNHP (Office of Conservation and Community Affairs, Department of Environment and Natural Resources) should be contacted before use of the data set at the construction design phase of a project to ensure data currency.

Dedicated Nature Preserves

The ecologically most important areas of the park are designated as Dedicated Nature Preserves (Figure 21). The shaded area shown within the South Mountains State Park property in Figure 21 is a 'primary' Dedicated Nature Preserve. This status represents one of the highest quality preserves in the state, assigning it the greatest protection. Dedicated Nature Preserves are governed by very strict rules for management which limit development within these areas. These rules are included in Appendix G.

Bat house in the park

Several areas of the park are not included within the preserve, most notably the area in the vicinity of the existing development around South Mountain Park Avenue in the Jacob Fork section of the park as well as the area in the vicinity of the Clear Creek Reservoir in the Clear Creek section of the park. The Bailey Fork watershed area, a portion of the northern area of the Henry Fork section and an

Interior of bat house, with two Rafinesque's big-eared bats in residence.

Table 4: Summary of Special Status Species and High Quality Natural Communities in South Mountains State Park (*Oakley, 2002*)

Common Name	Scientific Name	State Status	Federal Status
SPECIAL STATUS PLANT SPECIES			
Appalachian Golden-banner	*Thermopsis mollis*	SR	--
Ash-leaved Golden-banner	*Thermopsis fraxinifolia*	SR	--
Bear Oak	*Quercus ilicifoli*	T	--
Bleeding Heart	*Dicentra eximia*	SR	--
Blue Ridge Bindweed	*Calystegia catesbiana ssp. sericata*	SR	--
Blunt-lobed Grape Fern	*Botrychium oneidense*	SR	--
Bradley's Spleenwort	*Asplendium bradleyi*	SR	--
Carolina Saxifrage	*Saxifraga caroliniana*	SR	FSC
Daisy-leaf Moonwort	*Botrychium matricariifolium*	SR	--
Godfrey's Thoroughwort	*Eupatorium godfreyanum*	SR	--
Greenland Sandwort	*Minuartia groenlandica*	SR	--
Lance-leaf Moonwort	*Botrychium lanceolatum* var. *angustisegmentum*	SR	--
Large Witch-alder	*Fothergilla major*	SR	--
Shale-barren Blazing Star	*Liatris turgida*	SR	--
Small Whorled Pogonia	*Isotria medeoloides*	SR	T
Sweet Pinesap	*Monotropsis odorata*	SR	FSC
Sweet White Trillium	*Trillium simile*	SR	--
Thin-pod White Wild Indigo	*Baptisia albescens*	SR	--
Yellow Honeysuckle	*Lonicera flava*	SR	--
SPECIAL STATUS ANIMAL SPECIES			
Golden-banded Skipper	*Autochton cellus*	SR	--
Hoary Bat	*Lasiurus cinereus*	SR	--
Northern Long-eared Bat	*Myotis septentrionalis*	SC	--
Rafinesque's Big-eared Bat	*Corynorhinus rafinesquii*	T	FSC
Silver-haired Bat	*Lasionycteris noctivagans*	SR	--
HIGH QUALITY NATURAL COMMUNITIES			
Acidic Cove Forest			
Carolina Hemlock Bluff			
Chestnut Oak Forest			
High Elevation Seep			
Low Elevation Rocky Summit			
Montane Acidic Cliff			
Montane Oak--Hickory Forest			
Pine--Oak/Heath			
Rich Cove Forest			
Spray Cliff			

Notes:

State Status: E - Endangered; T - Threatened; SC - Special Concern; SR - Significantly Rare

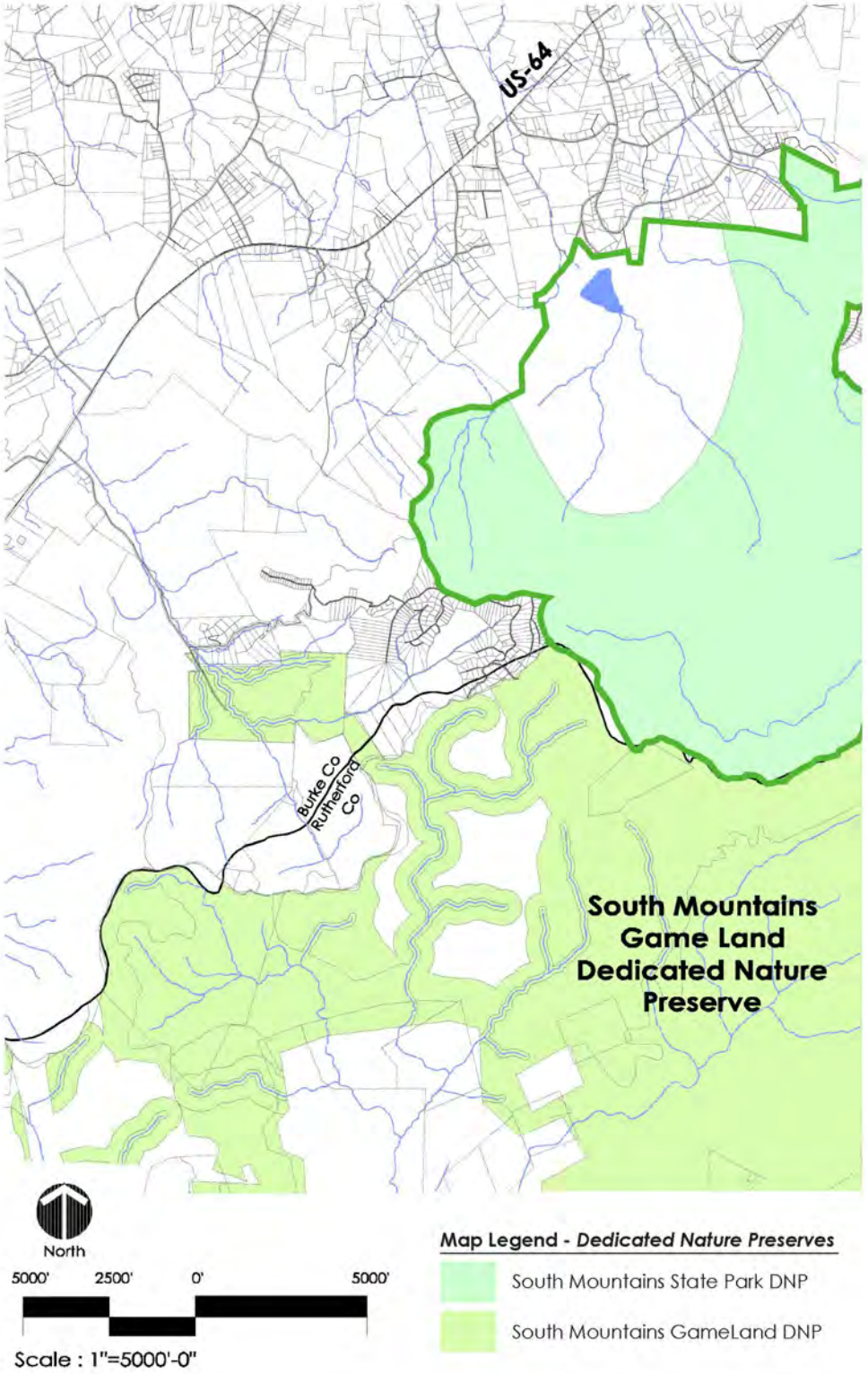
Federal Status: T - Threatened; FSC - Federal Species of Concern

area near the end of Baptist Camp Road, north of South Mountain Park Avenue, are also not included in the preserve.

The areas within the park boundary that are not part of the dedicated nature preserve are generally of lower quality and, therefore, include preferred development sites. Areas excluded from the preserve still require a thorough examination of logistical and ecological constraints prior to any development activity.

Yellow ladyslipper

Small whorled pogonia



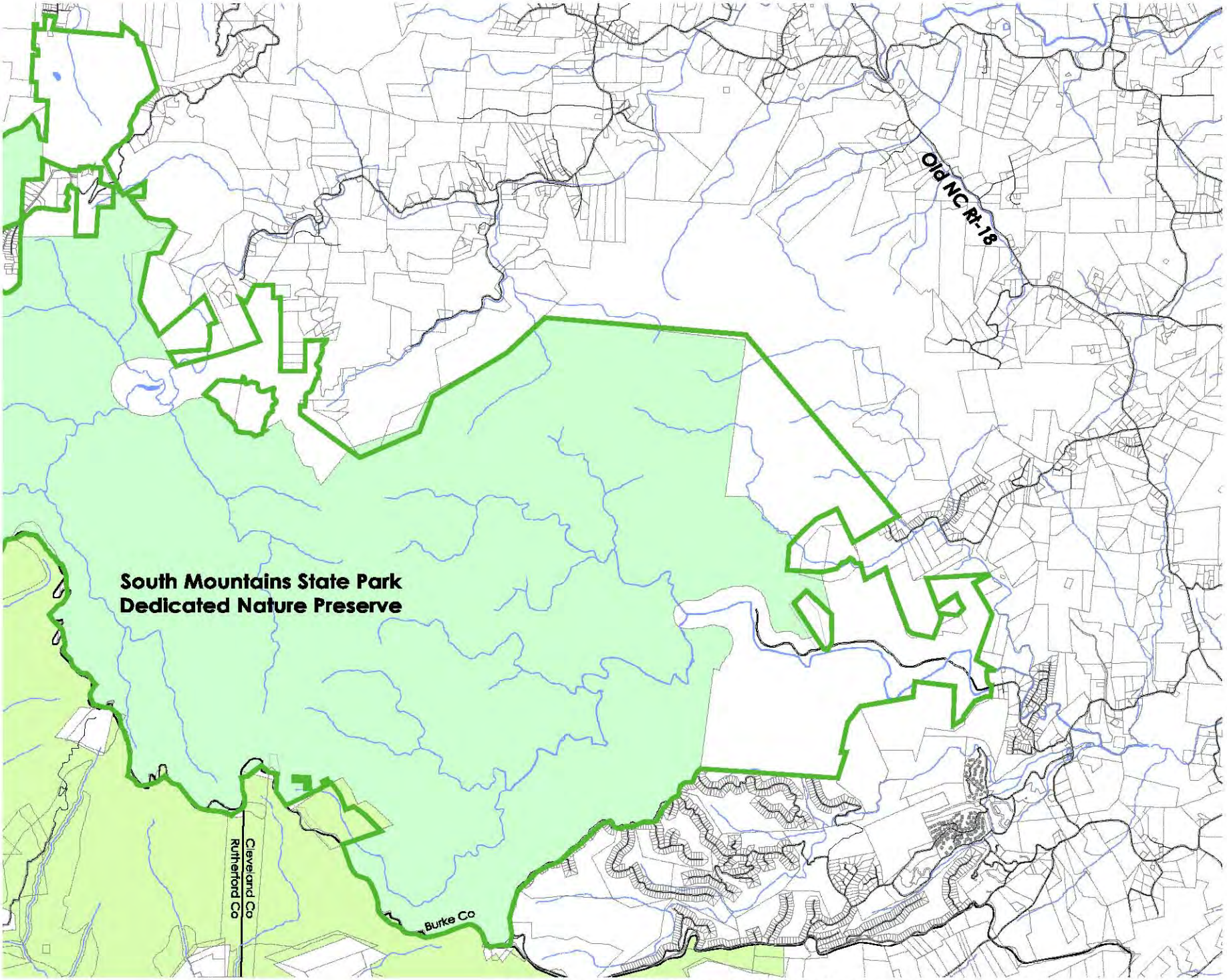


Figure 21: **South Mountains State Park Dedicated Nature Preserve**

Dedicated Nature Preserve data dated October 2005

Development Opportunities and Constraints

South Mountains State Park is the largest park in the state system and is located within a relatively short driving distance to the large metropolitan cities of Asheville, Charlotte and Hickory as well as other medium sized towns. The park, due to its size and unique topography and other sensitive environmental features, is physically divided into three sections, two of which are more easily accessible by vehicle.

The eastern portion of the park, the Jacob Fork section, is already developed with facilities described in the previous inventory and analysis portion of this document. The current park facilities include access to the beautiful, pristine streams and waterfalls along with other natural features. There are hiking, day-use picnicking, fishing, equestrian, mountain biking and other backcountry experience opportunities. The master plan improvements to these facilities, along with new facilities, are presented in the next section of this master plan.

The western portion of the park is currently undeveloped and provides an excellent opportunity for long-range planning that will guide the growth in a manner that fulfills the state parks mission of protecting the park's natural diversity, promoting outdoor recreational opportunities, and encouraging good stewardship of the park's natural resources for all visitors and citizens of North Carolina. Access to Highway 64 and Interstate 40 is in close proximity to this section of the park, which encourages visitation. In addition, there is an opportunity to develop this section of the park with an emphasis on universal design, making it "usable by everyone regardless of their age, ability, or circumstance" (*The Center for Universal Design, 2007*), to share the outdoor experience.

Since development other than trails and low impact campsites should occur outside areas of high ecological significance, two of the primary constraints used to define focus areas for development at the park scale were the natural resources and slopes. Referring to Figure 22, areas of focus were defined as the areas in direct relation to South Mountain Park Avenue in the Jacob Fork section and the area in direct relation to the current access point and the Clear Creek Reservoir in the Clear Creek section. Other areas within the

Flyfishing

Horseback riding

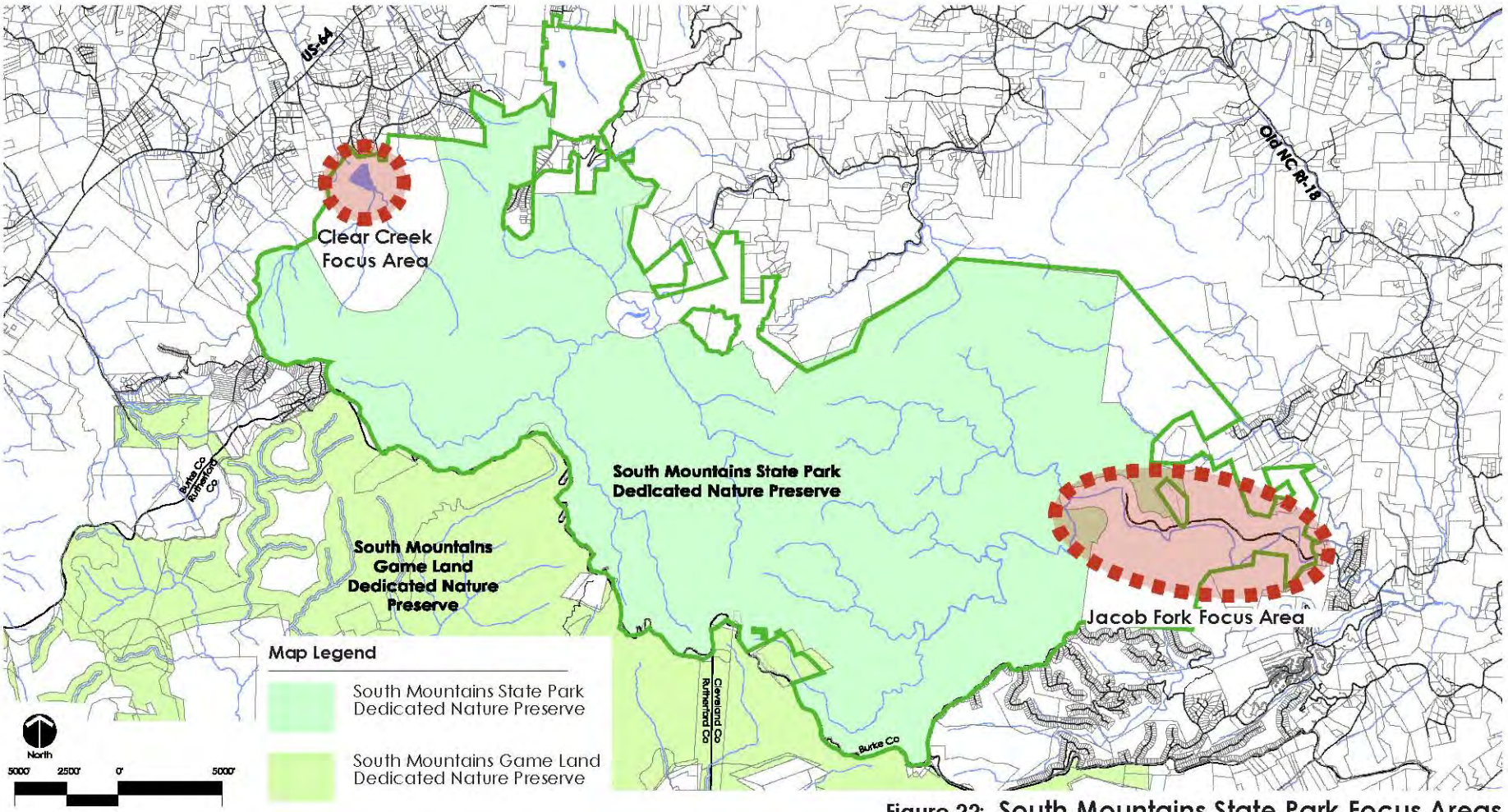


Figure 22: South Mountains State Park Focus Areas for Programmatic Activities

park were identified with major constraints that would make development in those areas too costly either financially or ecologically. Primarily these constraints are related to steep slopes, existing road access, and public safety issues.

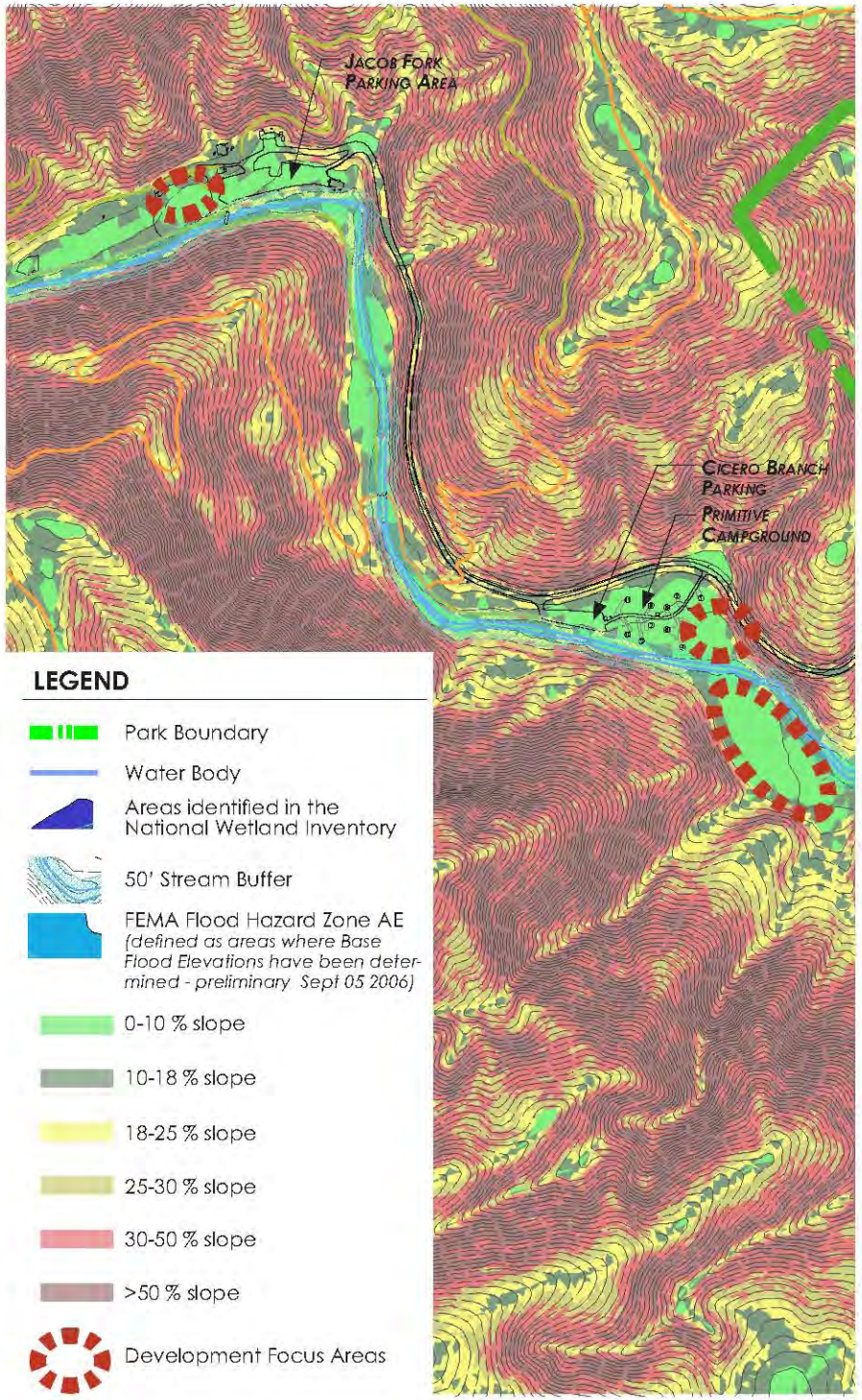
Once the focus areas were defined, a more detailed assessment of opportunities and constraints within the focus areas was performed. Other primary constraints encountered at this scale included areas with slopes greater than 18%, wetland areas as defined by the National Wetlands Inventory, floodplain as defined by the most recently available 100 year floodplain data and based on park staff input on floodplain areas, and 50 foot buffers defined for streams and other water bodies within the park. Figures 23 and 24, more detailed summary analysis maps, illustrate the opportunities and constraints in the Jacob Fork and Clear Creek focus areas, and refine focus areas to the denoted areas of development opportunity.

Concept Development and Goals

Since 1979, when the original master plan for South Mountains State Park was completed, the park has grown in size to become the largest park in the state park system. The park currently has 17,481 acres, is approximately 10 miles from end to end, and is approximately 42 miles around its boundaries. With the exceptions of logging activities, prospecting, and mining during the early 1800's, the land has remained relatively unimpeded by development. Even the settlement patterns on the land were very sparse, due in large part to the difficult terrain. Protection of the land and its waters was further afforded when some of the significant tracts of land in the Henry Fork and Clear Creek watersheds were retained for water supply.

As identified in the earlier circulation maps, points of access into the park lands are limited. For its size and proximity to large metropolitan areas, this is still a remote area and a very natural and unspoiled place.

The extensive areas identified as most important for protection are shown as Dedicated Nature Preserves. With few exceptions, this limits development opportunities within the central part of the park, including the majority of the Henry Fork and the Clear Creek



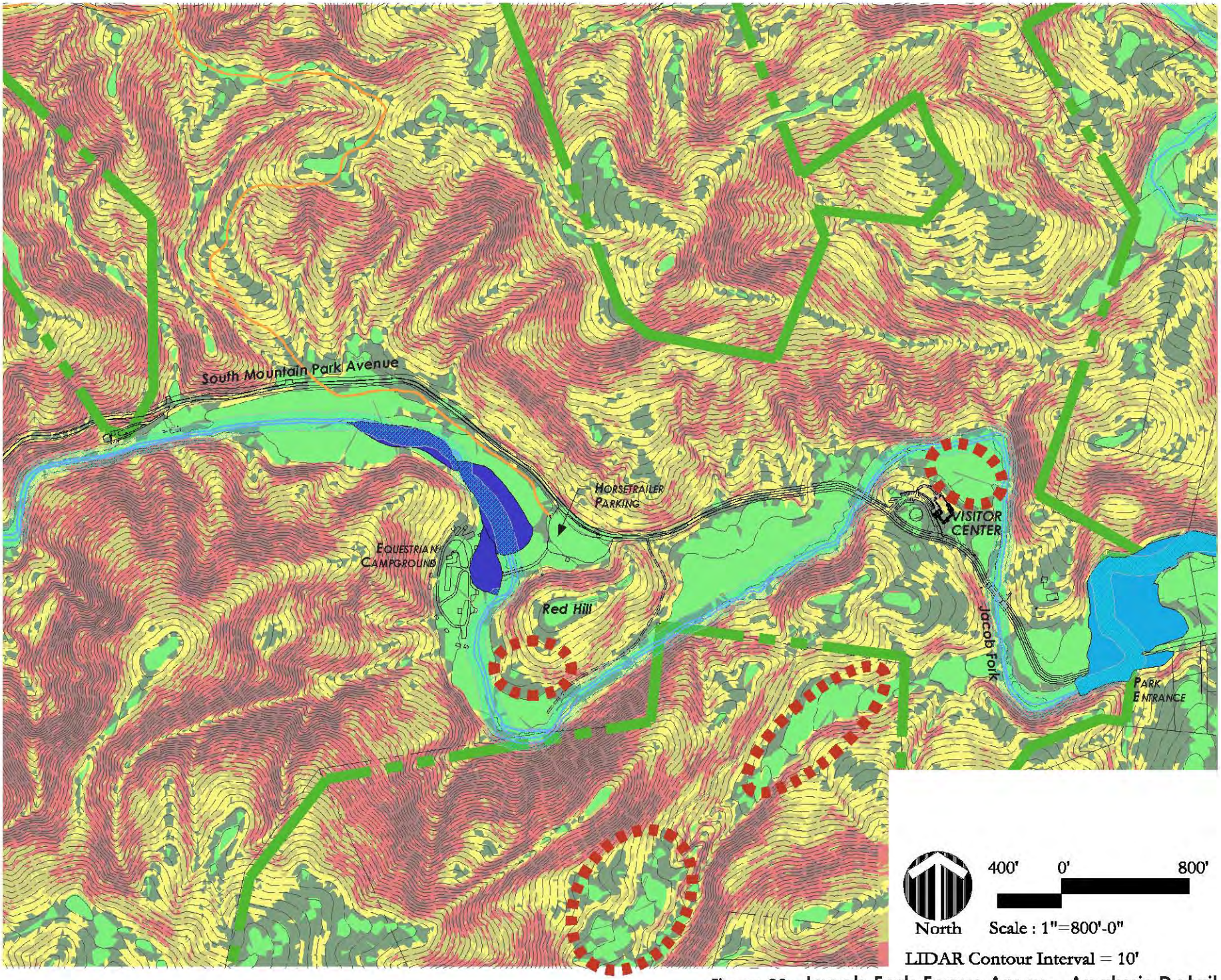


Figure 23: Jacob Fork Focus Areas - Analysis Detail

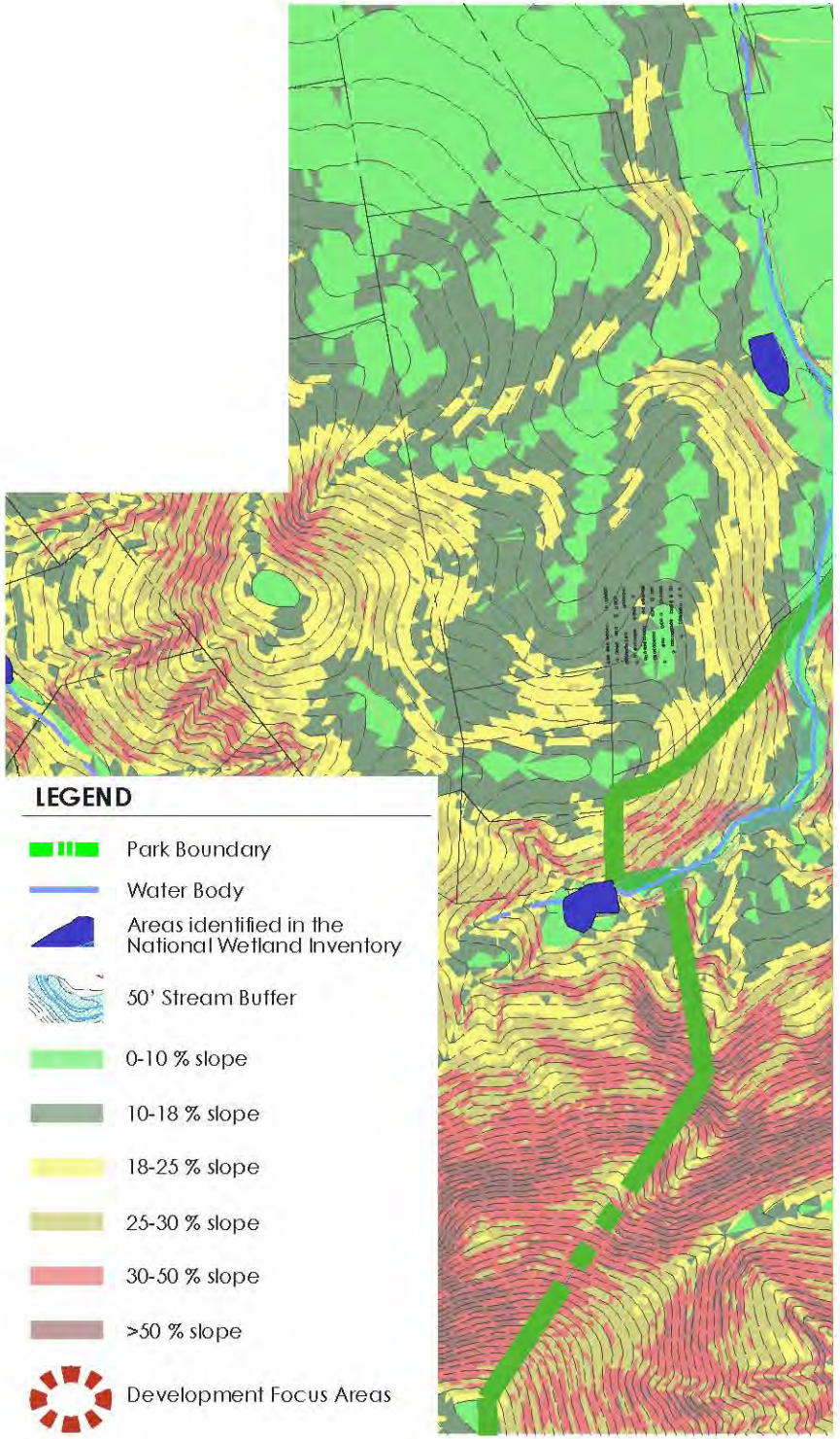
watersheds. The very steep topography in these areas also limits the connectivity and extension of roads or trails.

A primary goal of this master planning process has been to locate future programmatic elements and facilities in a manner that, to the best extent possible, ensures the protection of the significant natural resources of the park. As the NC State Parks Mission Statement articulates: "…the mission of the state park system is to conserve and protect representative examples of the natural beauty, ecological features and recreation resources of statewide significance; to provide outdoor recreation opportunities in a safe and healthy environment; and to provide environmental educational opportunities that promote stewardship of the state's natural heritage."

The master plan meets this mission by taking a comprehensive look at the entire park property, including possible acquisition properties within surrounding environs, in order to provide a clear development plan and guide for future activities. As outlined in the beginning of this document, the plan analyzes and evaluates the park land's data and extensive environmental information, conveys a design program of use, presents alternative design proposals that respond to the program, and considers other factors that affect the management of the park.

With increased park size and increased park attendance since the original master plan was prepared for the park, needs and demands have been expressed which form a program to improve current public use and recreation activities. Values have been articulated that protect and conserve significant ecological assets. Many opportunities exist for increasing the quality of user experience by expanding and enhancing existing facilities. The main goal of this planning effort is to best locate proposed development in order to protect natural resources, preserving the park lands for future generations.

The focus areas within the Jacob Fork and Clear Creek sections comprise a relatively small geographic footprint of the park property, designated on land with fewer constraints to park development. In the Jacob Fork section, all development proposals utilize the main spine road of South Mountain Park Avenue and already impacted old road beds in order to minimize further impact by the use of road extensions (see Figure 23). In the Clear Creek section,



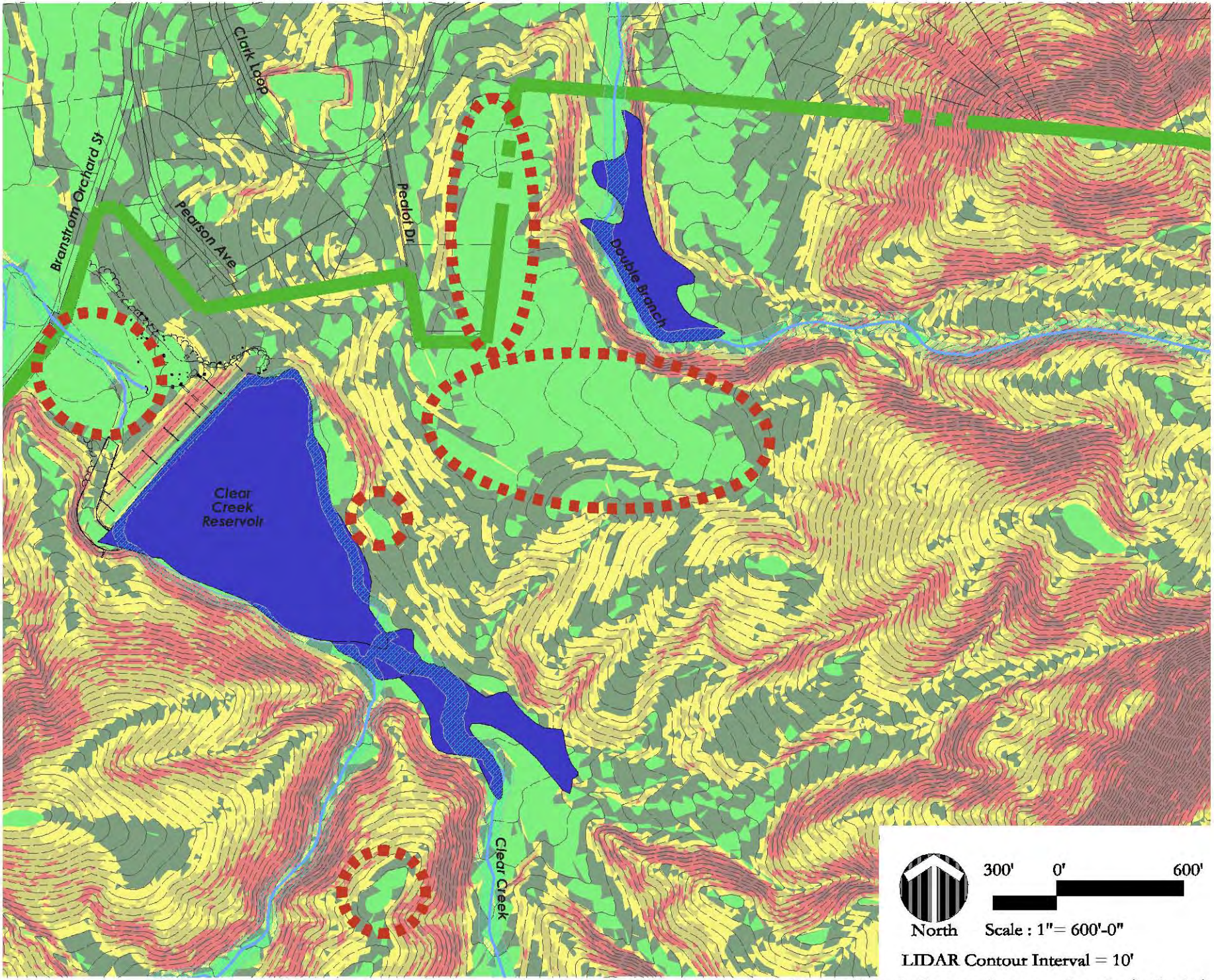


Figure 24: Clear Creek Focus Areas - Analysis Detail